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CCI View

Dear Reader

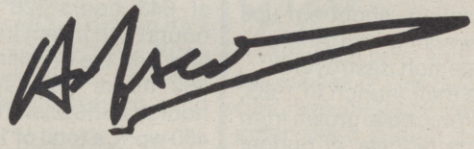
Dear Reader,
On the cover this month we are wearing the rosettes of Chelsea Football Club, adapted a little for Commodore. Not entirely a run of the mill thing for a computer publication! But then Commodore as a company is always surprising us. After all, just a little time ago they were supposed to be on the edge of extinction, now they are splashing out over a million pounds! And we hope that CCI is not entirely run of the mill as a computer magazine either.

We hope not too many CCI readers are such keen fans of other clubs that they won't want one showing the blues! But it's not easy to judge exactly what will please most people. And especially now with six different levels of Commodore computer owner whom we know buy CCI all who have different interests and needs.

We can sometimes guess that an item will please across the formats. In the program area this month we are publishing one routine that, with a little adaptation, will run on 64, 128, C16 and Plus/4. Hooray for some compatibility! But most of our material has to be aimed at the largest readership which is still, of course, the 64 owner.

But this month we have been able to get some excellent stuff from Canada for the 128 which will begin a series on that somewhat neglected machine and from the UK for the Plus/4, even more neglected its owners will tell you. That leaves the fading C16 with only one game this month for interest. That's sadly a sign of the changing of that particular field and though we are sorry, we have to answer when we get letters complaining, that we can't create the C16 products — we are a magazine not a software manufacturer. We can only report on what's there. For the 64, there is still no shortage and we have plenty, especially games.

We do this month publish some more general material — like a report on Smart Cards and another on CD Video which will interest anyone and provide a fascinating look at what appears likely to be exciting developments in the not so distant future. It has been estimated that ten years from now more than half of the electronic products we will then be using have not yet been invented today. Ten years ago, it's certainly true that things like home video and CD were not even heard of by most people. So our aim this month, as it is every month, is to cover the whole range of things connected with the electronic world that we think you might find will involve you in some way — even if not right now. If some of the things are a bit way out or seem a shade distant then that's not so surprising is it? Ten years ago there wasn't a home computer to be found and now there are more than 10 million around the world! One day people will look back to today and wonder why there were so few!



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CCI Programs on Cassette or Disk See page 124 for full information and order form.

Mega Merger

Premier Software House Hewson are launching a new range of top quality budget games on their new RACK-IT label.

In a bid to secure the best distribution for this exciting venture, Hewson have joined forces with Mastertronic, the largest producer of entertainment software in the world.

The combined high standard of Hewson products and the slick well oiled machine of the Mastertronic distribution network, will ensure that everyone has a chance to play these first class games.

The range has a striking image with an overall theme of black and white. The games are available on Commodore 64 and will appeal to all ages and tastes. There is "Draughts Genius" for those requiring more intellectual stimulation; arcade/adventures like Rex Harde and Herobotix for the middle of the road players and blasting shoot-em-ups like Powerama and Anarchy for the demon destroyers!

Since their launch in 1983, Mastertronic have grown from being the pioneer of budget computer games to an international software operation. They have recently hit the news with their development of the revolutionary "Arcadia" arcade video game system and have now broadened their penetration of the home entertainment market with the launch of two new companies, Mastersound and Mastervision.

Hewson can boast a wealth of experience gained from being one of the longest established software houses in the industry. The Company was founded in 1980 and is now among the most well known producers of entertainment software.

Recent hits of Zynaps, Exolon and Rana Rama have accentuated their standing in the industry and the new RACK-IT range looks set to give them a firm footing in the rapidly expanding budget market.

The RACK-IT range will be available at £2.99 from all major retail outlets in the U.K.

Konix Speed King gets the waggle treatment from competition winner Geert in Brussels.

Konix Waggle Winner

Konix have announced that the proud winner of the Speed King joystick Waggle competition, is Maris Geert of Belgium, who has been presented with the prize of £100. Maris had the nearest guess at 643 hours (26 days, 19 hours) and in fact the joystick survived the gruelling test for 652 hours (27 days and 4 hours) at the blistering rate of 450 wpm, a total of 17,604,000 waggles.

Commenting on the award Maris Geert said, "I had heard how durable the Speed King is, and so I worked out how long decent joysticks should last when playing Daley Thompson's Decathlon, doubled — et voila!"

Maris, whose favourite computer games are Uridium, Enduro Racer and Lords of Midnight, said that he fully expects to be zapping aliens with his Konix Speed King joystick for a long time.

A 'booby' prize is being awarded to the entrant who guessed the joystick would last only 14 minutes. He will be sent a Speed King joystick so that he can see for himself the durability of the joystick, even when playing Daley Thompson's Decathlo.

Another joystick is being sent to the competitor who thought it would last for 8 years, which even Wyn Holloway, Konix M.D., admits is an impossible task even for the Konix joystick.

Evesham surveys the Commodore Show

Despite the release of the Commodore 64C, 128 and 128D in recent years, the good old Commodore 64 still accounts for almost 80% of the Commodore market, according to research carried out by Evesham Micros at the Commodore Show in June. This conclusion to the research is particularly encouraging to Evesham, whose product, The Slimline 64, transforms the Commodore 64 so that it is as elegant as the later Commodore models.

The research was carried out by distributing 1,000 questionnaires at the Commodore Show. To encourage entrants 10 Slimlines were offered as prizes to people selected at random who completed the forms, or an alternative of an equivalent prize from Evesham Micros to those who did not own a Commodore 64.

The results of the research were as follows:
77.02% of those questioned owned a Commodore 64
3.15% owned a 64C
17.12% owned a 128
2.7% owned a 128D

By far and way the most popular game was Elite which claimed 8.5% of votes cast. Leaderboard, Boulderdash, Uridium and Trivial Pursuits came joint second, each with 2.5%.

Results also showed that 6.31% of the people questioned also owned Spectrums and a similar number also owned Vic 20s. 3.6% also owned a ZX81 and 2.7% various Ataris. 0.9% owned Amigas, 1.8% Amstrads, 0.9% Plus 4s, and 1.35% owned PETs.

Another question posed asked what type of computer people would like to own. The clear winner here was the Amiga with 61%, second was the Commodore 128 with 14% and 13.5% had no opinion. All other computers were a great deal less popular among the Commodore owners, for example the Atari ST received just 4% and all IBM compatibles, including the Amstrad, received only 2%.

For Evesham Micros, Richard Austin commented "The research shows many people are still reluctant to replace their original Commodores by spending a lot of money. We have a simple message for these people — "The Slimline costs just £19.95 and for that you can make your Commodore every bit as elegant as a 64C or 128D."

All Star Cricket

Graham Gooch's All Star Cricket, the newest and best cricket simulation for the Commodore 64 will be released.

Two years ago Audiogenic released Graham Gooch's Test Cricket, until now the most realistic cricket simulation. But All Star Cricket is packed with new features — for example, there's a practice mode in which you can brush up your batting and bowling — and action replays after the fall of a wicket so that you can see just where you went wrong!

Authentic features include dropped catches, wides, bouncers and full tosses — even the occasional 'retired hurt'! Scorecards are displayed at the end of every over, there are messages that scroll across the screen when a player or a partnership reaches 50 or 100, plus realistic sound effects and superb digitized speech.

Built into the game are players and averages for England, Australia, West Indies, Pakistan, India, Sri Lanka and New Zealand — plus a World XI and an All-Time XI (imagine Ian Botham bowling to W. G. Grace, or Viv Richards facing Harold Larwood!).

Graham Gooch's All Star Cricket for the Commodore 64 costs £9.95 on tape or £11.95 on disk. Available through dealers, or direct from Audiogenic at Winchester House, Canning Road, Wealdstone, Harrow, Middlesex HA3 7SJ. Tel: 01-861 1166.

Robtek announces hardware label

Following the manufacturer of 2 disk drives, a Ram Expansion Box, and a Magic Monitor Interface, Robtek has announced the launch of a hardware label, HI-TEK.

"It seemed a logical idea for label divisions to be set up as we become more involved in different fields," said Sales Director, Mike Segrue.

"We now have three clear brands; Robtek productivity and utility packages, Diamond Games leisure software and now Hi-Tek hardware."

Robtek's new joystick

Robtek Ltd., has acquired the rights for the UK and Germany for Terminator, the new joystick from Supersoft, Denmark.

Sales Director, Mike Segrue, said: "We are looking to achieve very high sales on what is an excellent and very novel product. We will be retailing the product at £19.95 and advance sales are already looking extremely promising."

Cheetah launches club

Cheetah Marketing Limited have lauched a club which offers FREE Membership to anyone who has purchased a Cheetah product.

Hundreds of people have already joined and will receive regular news bulletins, special offers and very sizeable discounts on Cheetah's range of products.

All you have to do is write to Cheetah for an application form.

Remember, you must own a Cheetah product and membership is FREE.

Contact: Cheetah Marketing Ltd., Norbury House, Norbury Road, Fairwater, Cardiff.

Firebird Silver releases

Back to the Future — Commodore 64/128
Anyone not familiar with the plot of the hit film must have spent the last year or so living in a cave!

Marty McFly, a high school senior, has, with the help of "Doc" Emmett Brown, travelled back in time to 1955 in a souped-up De-Lorean sports car. Sounds like a good wheeze! Alas, Marty has unwittingly distracted his future mum, Lorraine, from falling in love with George, his prospective father. Marty must quickly encourage George and Lorraine to get romantic or his family will cease to exist!

Pitfall — Commodore 64/128
If you enjoyed the escapades of Indianna Jones you'll love this game! **Pitfall Harry** is your name — adventurer, treasure hunger and explorer extraordinaire!

You know of a hidden treasure! — to get to it you have to enter the inhospitable jungle and find your way through a subterranean maze full of creepy crawly things set on devouring you! Act like Tarzan as you swing from vine to vine avoiding swamps full of crocodiles or use them as stepping stones — be warned — make sure their mouths are shut or they could be your **Pitfall!**

Pitfall II — Commodore 64/128
Make Indianna Jones look a whimp in the next thrilling adventure of **Pitfall Harry!**

This time you're in search of your niece Rhonda who has fallen into the hands of the cursed Raj Diamond and Quickclaw the cat who have taken her into the treacherous caverns beneath Peru!

There's only one thing you can do — put on your leather jacket and enter the dark world of the caverns. Swim across vast lakes — watch out for the electric eels. Use balloons to float you past dangers — anything from Vultures to man eating Wolves —as you negotiate your way to finding Rhonda. Oh! by the way, don't forget to collect all the golden bars as you search for Rhonda — just a little extra. All £1.99.

Releases? Indianna? Whimp? That's how Firebrand spell them! Anybody got a spellchecker to lend them?

Firebird announces its new budget range

With Firebird's Silver £1.99 range now firmly established; Firebird have announced their intention to release a new budget label.

The new range which will be priced at £2.99 is aimed towards the consumer who is looking for a slightly more up market product, yet still at a budget price.

For its first launch the Firebird £2.99 label will be releasing two products.

'Hyber Blob' for C64. Oh No! the 'Blobpods' are about! And what's more, you're in charge of them! Help the Blobpods across some tricky landscapes of blocks — Some of the blocks are quite fragile and will break up under the Blobpods feet, others are very hot and will burn. Be warned Firebirds says and don't let the Blobpods fall through the gaps.

Ubiks Music' on the Commodore 64. Firebird is intending to complement its best selling drum machine 'Microrhythm' with a music machine. This Polyphonic sequencer draws all the best features out of the C64 SID processor in a hitherto Firebird claims impossible manner! You will be able to access all Waveform modulation features on the three inbuilt channels on the 64, but there's also a fourth channel to allow you to include digitised sounds — Perhaps the drums from Microrhythm even?

If that's not enough, you can then extract music files created with the program, and include them in your own games.

'The serious utility for non-serious users!' is what Firebird calls it.

Ace over The Edge

The Edge — owned by Softek — famed for the Fairlight games is starting a new label — Ace. It is designed for an early teens age group and says Tim Longdell, The Edge's M.D. and "Looks to take on the US Gold's, Ocean's and Elite's by Christmas". This big ambition is based on 'Alien Syndrome' — a conversion from the most successful coin-op at the moment after Outrun. 'Alien Syndrome' Longdell claims will challenge for the biggest game of the year spot at Christmas.

Ace games will sell at £9.99 for the 64 and the first to be released will be Xecutor. All Ace titles will also appear on the Amiga.

New CAD Package for C128

Supersoft have announced the release of CAD128, a low cost two-dimensional computer-aided design package for the Commodore 128 (80-column mode). Although CAD128 can be used for virtually any application special features have been included to assist the design of small printed circuit boards (up to 6.4 in by 3.76 in).

CAD128 automatically makes use of Commodore's 128k memory expansions when installed, one of the few programs to do so. It will output to an Epson-compatible dot matrix such as the MPS1000.

Supersoft are one of the few software houses to publish software specifically for the 128 — their range includes the BLITZ Basic compiler, RHYTHEM KING drum machine, 128 PLUS upgrade kit, ZOOM monitor, and HELP utility cartridge. Due to be released shortly is WORD PERFECT PLUS which will run on the 128 in either 40 or 80 column mode.

CAD128 costs £49.95 (disk only) and is available direct from Supersoft
Tel: 01-861 1166.

E.A.'s Wave of New Games

Electronic Arts has announced a whole pack of new games. Its award winning conquer-the-world strategy game, **Lords of Conquest,** is available for the Commodore 64/128 and IBM PC and compatibles. As is **World Tour Golf**. It is bringing out Chuck Yeager's **Advanced Flight Trainer** for the 64/128 and is making **Deluxe Paint II** generally available in Europe.

"Lords of Conquest could be compared to the famous board game RISK," said Mark Lewis, Director of European Publishing. "Anyone who has enjoyed RISK will love **Lords of Conquest**. A classic strategy game in which the action takes place on a world map, **Lords of Conquest** is superior to RISK because it takes advantage of the computer's power to add greater depth and variety." Lewis noted that players may use the program's built-in maps as they are, modify them or design their own game map with the game map's generator.

In **Lords of Conquest**, a single player may play against the computer or up to three other player. Each opponent chooses home territories, then tries to protect his holdings while conquering territories belonging to the opponents. Strategically important resources such as gold, herds of horse, iron, timber and coal are distributed randomly throughout the onscreen map's territories. These resources may be used in exchange for important forces such as foot soldiers, cavalry, fleets and cities, thus making resource-bearing territories prime targets.

Lords of Conquest takes place in yearly cycles, each containing four or five phases. During each phase, players make crucial decisions that eventually lead to defeat . . . or victory.

Lords of Conquest provides 4-levels of game complexity to choose from. At the game's outset, players determine the amount of resources, the kinds of forces to be used, the availability of transport, and the level of chance. Depending on the level of complexity **Lords of Conquest** may be played in a time space of as little as 20 minutes, or can occupy several hours.

"What begins as a game with players taking turns and strategically placing resources easily turns into spirited battles with emotions riding high," continued Lewis. "Diplomacy is crucial, and players will soon learn that conquering the world is no small risk."

Even for Electronic Arts?

World Tour Golf includes a wide variety of classic courses like Scotland's *St. Andrews,* Georgia's *Augusta* and the world famous *Pebble Beach* in California. **World Tour Gold** can also accommodate players who want to practice specific types of swings before venturing out onto the course, and it comes with a construction set for designing tailored courses.

Players can choose from twelve of the world's greatest golf courses or architect the fairway of their dreams in just minutes, including precise placement of hills, bunkers, trees and water hazards as well as distances to the green, green slopes and background skyline. The program also includes a championship course made up of the world's most difficult holes.

Using Match or Medal Play, **World Tour Golf** is designed for up to 4 players. Or players can compete against up to three computer duffers and set the player characteristics for each. Attributes include handicap, strength variations, club skills and hook and slice tendencies. Players can use their imagination to create an original golfer, or they can model a player after a favourite pro such as Jack Nicklaus or Arnold Palmer.

Split screen animated graphics give both an overhead view and a golfer's eye view of the hole. Realistic terrain, including hills, trees, water hazards, sand traps and bad lies are included on each course, and random weather conditions ensure a different game every time one is played. To enhance the game, the automatic "Ranger Finder" checks your club's driving capability on-screen, and the "Power Meter" lets you adjust your backswing.

"Improving a game is easy," said Mark Lewis. "Just practice your shots on the built-in driving range or work on a short game at the putting green. Players can also choose an individual hole on the course to practice on."

Chuck Yeager's Advanced Flight Trainer uses a superfast frame rate that lets the user really experience the thrill of mach-speed flight. "The technology used in this product represents a giant leap forward in flight simulation, and a lot of what you see here will be imitated by our competitors," Lewis noted.

The simulation features three levels of onscreen instruction from General Yeager. The first level teaches basic flying skills like takeoffs and landings; the second goes on to advanced maneouvres like aileron rolls and hammerhead stalls. By the third level, the student pilot is learning acrobatic stunts, and is ready to use the Formation Flying feature, following Yeager's lead through death-defying obstacle courses and 3-D terrain. There is also a Flight Recorder that allows students to create and store their own stunt flying patterns.

It also features a Test Pilot option, which offers a selection of 14 aircraft to check out, using actual test pilot aircraft evaluation charts, including historic aircraft like the Sopwith Camel F-1, the Spad XIII, and Yeager's favourite, the P-51 Mustang — plus modern planes like the SR-71 Blackbird, the F-16 and the F-18. Users can even test-fly one of the three experimental planes — you're on your own with an unknown machine! General Yeager concurs: "The simulation is very realistic, I'll tell you. The guys at Electronic Arts have taken the terror factor out of test piloting and made it fun for everybody."

Chuck Yeager, Electronic Art's test pilot, collaborates on their new flight simulator.

The program also includes an Airplane Racing option, which lets the "computer pilot" choose a plane and take it over one of six different racecourses. The computer controls your competitors, and records your course results.

PSS off to £4.99

War game publisher PSS has joined the ranks of Gremlin, Interceptor, Micro Value and Software Projects by launching its own mid-price games label.

Classic Conflicts has been established to re-launch several older titles at £4.99 on cassette and £9.99 on disk. "It may or may not be successful for other software houses, but I know it will prove to be successful for us," says PSS M.D. Gary Mays enthusiastically.

Battle For Midway, Battle of Britain and Theatre Europe are three of the PSS re-releases.

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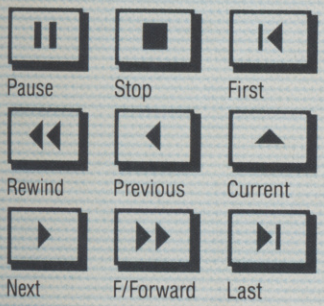

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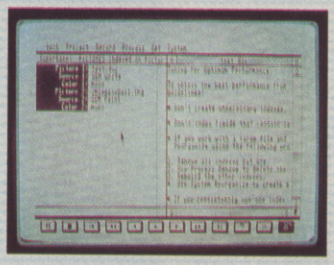

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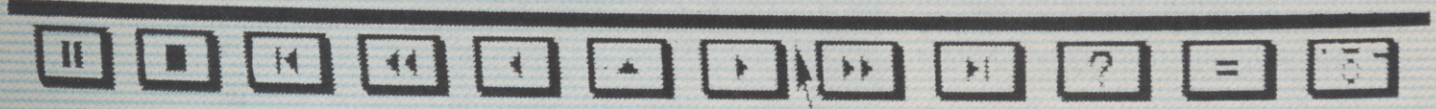

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NOW OTHER HOME COM

Amiga 500 is here.

With a mind-blowing array of features and capabilities.

And a £499‡ price ticket (ex VAT), hundreds of pounds less than anyone could have predicted.

"...a miracle of compression..." writes *Popular Computing Weekly** "...it all adds up to a formidable system which is clearly better than anything else at the price."

This elegant little machine takes family computing into new dimensions of creativity, excitement and productivity.

It outruns and outguns office PCs as a business multi-tasker, performing a deskful of different jobs simultaneously, at over 7 million steps per second in realtime.

So other home computers may not be the only machines it consigns to the toy cupboard.

AMAZING SCIENCE FACT!

Amiga is used by Disney, Universal and other Hollywood studios for its dazzling 3D graphics manipulation and animation powers.

A sophisticated high-speed graphics processor called a blitter chip transforms images in realtime.

You can paint the screen with more than 4,000 colours. Create and modify designs and effects as you like, with pin-sharp resolution.

You command an almost limitless workshopful of stunning professional graphics capabilities.

With an optional Genlock interface, you can capture images off videotape. Manipulate and mix them with graphics. Then re-transfer them to videotape!

This means you can produce spectacular special effects like those created by Amiga computers for Channel 4's *Chart Show* and the American TV science fiction series *Amazing Stories.*

YOU AIN'T HEARD NOTHING YE

Concealed within the sleek Amiga shape, there is also a pro-quality sound synthesiser an four-track stereo sound system.

Driven by another powerful and unique custom chip, it can synthesise musical instruments an

‡Includes DeluxePaint from Electronic Arts worth £79 + VAT! (Excludes monitor or TV modulator.)

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AMIGA

IGA 500.
PUTERS ARE JUST TOYS.

sound effects.

An optional digitiser allows you to take onboard real sounds. Mix and modify the two. Translate your compositions from keyboard to sheet music. Play them back through the monitor's speaker or your hi-fi.

Your Amiga can also synthesise the human voice.

It can speak back anything you care to write on the keyboard.

So this is one computer that can not only word process with faultless professionalism, and incorporate superlative graphics into the text, it can also read the text back to you aloud.

GAMESMANSHIP AND WORKMANSHIP!

The new Amiga 500, in fact, dumbfounds its competitors in every way.

Graphics, stereo sound, multi windowing, multi screens, 512K to 1Mb RAM (expandable by an incredible 8 further megabytes externally**), 3½" internal disk drive with 880K of mass memory, 4 unique dedicated chips plus the 16/32-bit power and 7.14MHz speed of its central processor, communications and vast expansion potential all add up to a computer of immense professional capability.

Yet the same technology allows the Amiga 500 to play games so mind bending that only full-scale arcade machines have been able to play them until now.

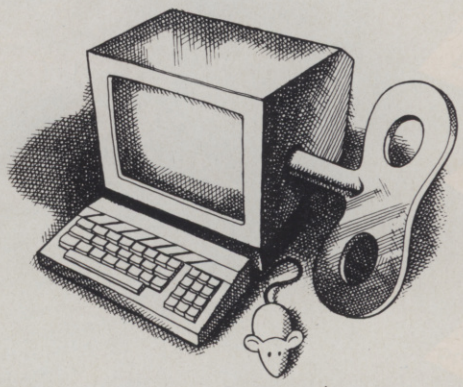
AND AMIGA MEANS 'FRIEND'!

However many of the Amiga's extraordinary talents you find yourself using, they will all be beautifully simple and natural.

You will be totally at home in the friendly and effortless Amiga environment, where everything happens by windows, icons, mouse and pulldown menus.

And the Amiga 500 simplifies life in another way too.

There is now no comparable home computer. At any price.



Try the astonishing new Amiga 500 at your nearest Commodore Amiga dealer.

And discover why *Personal Computer World*†, having tested the graphics performance of Amiga's latest and most powerful rival, concluded "...Amiga still reigns supreme..."

AMIGA

Commodore

Popular Computing Weekly, 22-28 May 1987. †*Personal Computer World*, February 1987. ** *Subject to availability.*

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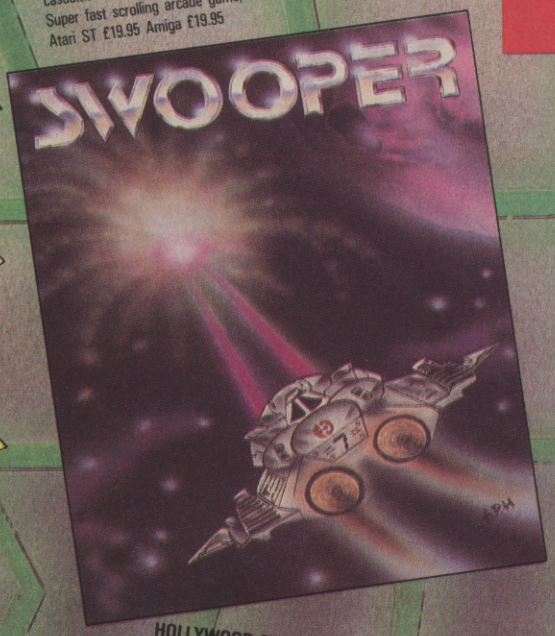
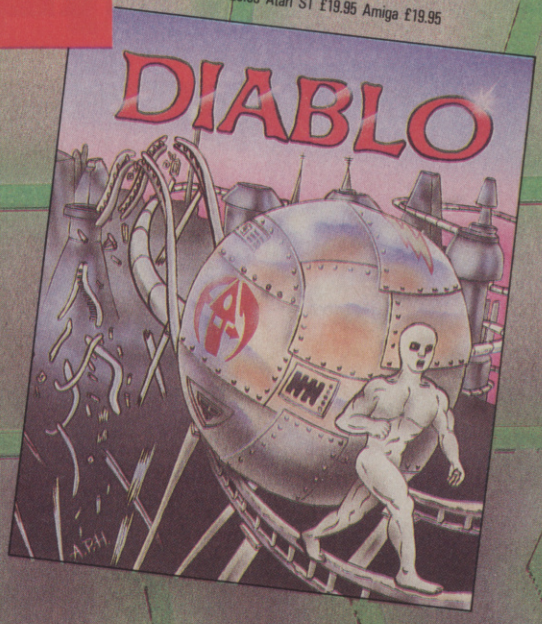
SWOOPER
Special report from xenon space station+++yesterday at 10709 startime pariah epidemic broke out+++vaccine newly developed on earth urgently required+++epidemic probably due to attack by the Wegans+++they blocked off our station, battle craft needed+++hurry, as already many casualties+++ends xenon+++
Super fast scrolling arcade game, brilliant sound.
Atari ST £19.95 Amiga £19.95



DIABLO
This game is very simple really. You slide pieces of track in front of a moving ball, and as it passes over a section of track, the track disappears. You just have to keep the ball rolling unti all the track is gone. Graphics are simple but effective, sound is nice and the mouse interface easy to use. It's also so maddeningly addictive that it could earn you a one way ticket to the funny farm.
CBM 64 disc £9.95 Atari ST £19.95 Amiga £19.95



HOLLYWOOD POKER
Hollywood poker is a high class strip poker with the help of digitised graphics. Play poker against beautiful girls, one of them a real miss Germany! When your partner loses money she has to take off her clothes. You can choose between four different girls. Try your luck.
CBM 64 cassette £7.95 CBM 64 disc £12.95 Atari ST £14.95 Amiga £19.95

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DIAMOND

Diamond Games, Unit 4, Isleworth Business Complex,
St. Johns Road, Isleworth, Middx TW7 6NL.

DTP Oscars

The UK desktop publishing industry — estimated to be worth £300 million by 1988 — is to have its own version of the Oscars. Pira, the UK technology centre for the printing and publishing industries, has announced it is to sponsor the new awards. The winners will be announced at The Desktop Publishing Show 1987 to be held at London's Business Design Centre from October 15 to 17.

There will be three major award categories:

1. The newspaper or magazine to truly reflect the virtues of the new technology.
2. The most outstanding company report to be produced in-house.
3. The best example of a leaflet, newsletter or brochure.

In each case, all the work must have been "predominantly produced" using a desktop publishing system.

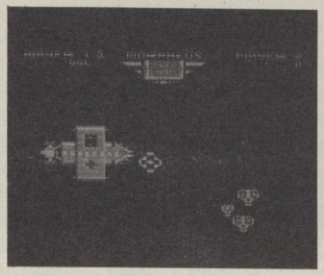
A panel of expert judges drawn from the fields of both design and print will make the final decisions.

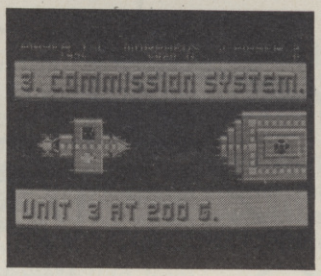
"Desktop publishing is revolutionising the way we communicate in print", says Tom Hunter Craig of Pira.

"With these awards we hope to ensure that the standard of excellence so long demonstrated in the UK publishing field is maintained."

Pirate Raids Budget Strongholds

PIRATE SOFTWARE No, no relation to Microprose's new game as, we hope, of rip off merchants, is a new budget line masterminded by Leigh Richards. It is set to launch PIRATE GOLD (£2.99) and PIRATE SILVER (£1.99) with a four title release in the Autumn. PIRATE, the leisure budget label of SOFTWARE PUBLISHING ASSOCIATES plans to release 25 titles prior to Christmas and have committed to 8 titles each month during 1988.





Braybrook Strikes Again

Malevolent morphs, opposing orbitals and stunning space battles create the marvels of 'Morpheus', a new 64 game from Hewson. Renowned for his past successes of Paradroid and Uridium, Andrew Braybrook it seems has produced yet another scorcher.

The game takes place on an atomic scale with the universe split into two equal but oppositely charged halves. Armed with a charge conductance gun, guide your ship from the safety of its holding bay into the eerie expanse of open space. Do battle with the most evil of alien space creatures, dodge and swerve the array of advancing attack waves. Seek and destroy the death defying orbitals and increase your points to invest in the latest games and systems. (your what?)

'Morpheus' is a 50 level space epic by Hewson's master of the keyboard, Andrew Braybrook.

It has over 320 sprite images which is nearly double any of Andrew Braybrook's previous games and a sprite multiplexor system capable of 32 sprites on the screen.

It also has four-layered parallax movement in space in *any* direction.

Look for Morpheus in the Autumn.

Deluxe Paint II

The already famed Deluxe Paint I set the standard for Amiga Graphics packages and inn the U.K. is bundled with the Amiga 500.

Deluxe Paint II has over 90 painting tools and effects — including Perspective, custom brushes, Variable Zoon, Stenciling, Fixed Backgrounds, Gradient Fills, Pattern Fills, colour cycling, font control and symmetry.

Besides providing ten built-in brushes, **Deluxe Paint II** lets the artist copy or pick up any piece of a painting, and use it as a brush or pattern fill. The "brush" image can be rotated, stretched and flipped (vertically or horizontally), or used as a nozzle on the Airbrush tool. Other tools, like the dotted freehand, continuous freehand, straight line, curve, fill, rectangle, circle, ellipse and polygon tools, further expand the program's versatility.

Artists can create a custom palette of up to 32 colours from 4,096 available shades. In addition, the Gradient Fill tool allows the artist to define a custom range of gradient colour blends to fill in any enclosed area. The Pattern Fill option fills any enclosed space with a repeating pattern of images. Artists can create their own patterns, or use one of over 65 fills provided with the program. The Fixed Background feature literally attaches the picture to the background so that it can't be disturbed by overpainting.

Two of **Deluxe Paint II**'s unique features are Perspective, which allows artists to set a vanishing point and rotate any art element in three dimensions to create true perspective; and Colour Cycling, an animation effect which cycles a range of colours through a static image to create the illusion of motion. "You can store up to four cycles per picture — each rotating in a different direction, with a different colour blend," Lewis added. **Deluxe Paint II** also supplies a drafting grid and shows screen coordinates for exact point-to-point measurements.

Deluxe Paint II's Four-Level Zoom provides four levels of magnification, with complete use of all tools. A split-screen shows both the magnified area and the original-sizes painting, making it easy to do pixel-by-pixel work on pictures that may be as large as twice the size of the screen. Other features for fine-tuning artwork are Anti-aliasing, which smooths jagges lines; and Smooth, which creates a more subtle boundary between two contrasting colours.

Lords of Conquest £9.95 (c) £12.95 (D), PC version £24.95; World Tour Golf C64 £9.95 (c), £12.95 (d), PC version £19.95; Chuck Yeager's Advanced Flight Trainer C64 £9.95 (c) £16.95 (d); Deluxe Paint II Amiga £69.95.

Martech's Mansell

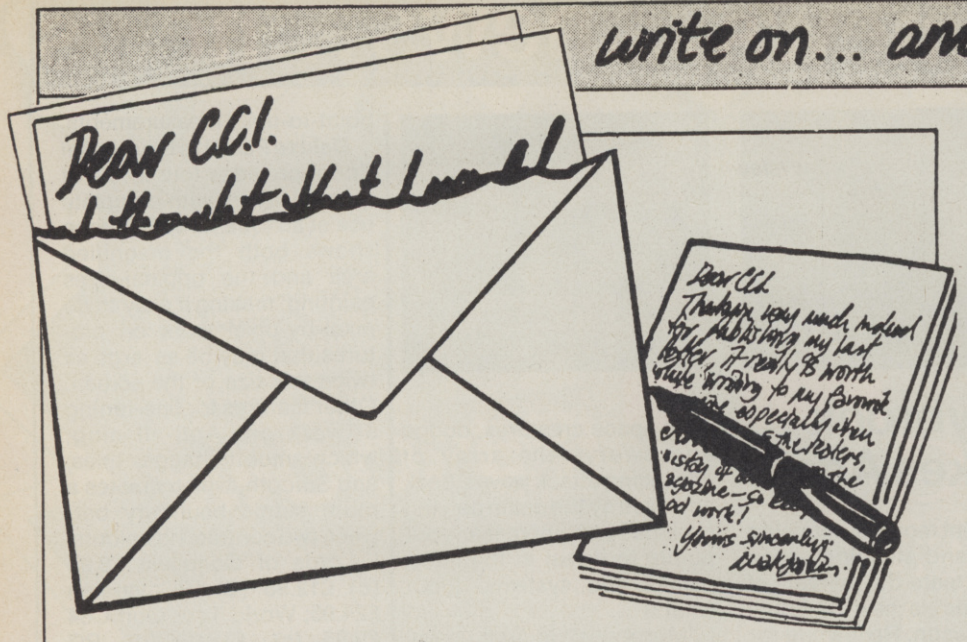
To celebrate Nigel Mansell's performance in the 1987 Formula One World Championship, Martech is releasing what they believe will be the number one racing game, Nigel Mansell's Grand Prix. The release date is November 19th, four days after the last race in Adelaide, Australia.

The game features the latest advances in car design and technology, allowing the driver to obtain all the necessary information on the condition of his speed machine and its position in the race. There is also a communications and computer link to the pits, enabling his team to give vital race instructions and information.

For novices who feel that digital displays and telemetry may prove a bit too much to handle, this seems a great opportunity simply to blast around the track at excessive speeds with the turbo on maximum boost and not a care in the world for fuel consumption, tyre wear or racing line. We'll see if Mansell has as big a success in the World Championship. Our tip is his team mate Nelson Picquet!

For further information contact Headlines P.R. on 01-278 0333.

write on... and on... write on...



Dear CCI
During the last few months, I've had a number of comments and queries building up in my mind and I have finally decided to put pen to paper, or rather fingers to wordprocessor.

1. Is the Music Expansion System from Commodore worth buying, especially now as the price tag has been halved, or is Rainbird's Advanced Music System better value? Howsabout writing a review on Commodore's package, or reprinting one that you might have already written.

2. I enter your competitions quite often. Would it be possible to send the postcards for each issue, in an envelope to save postage?

2. In August's CCI, S. Hewison said in a letter that it would be a good idea to "Revamp the rating system". I don't have any brilliant ideas on this subject, although I totally agree with what he said. It might be a good idea to choose the best game reviewed each month and give it some recognition of its quality, coloured screen shots, a longer more detailed review, etc.

4. Having said that, I know that CCI isn't a dedicated games magazine, you get a perfect balance between games and more serious software.

5. Finally, I think that CCI is by far the best magazine out for the 64, keep up the good work!

Yours faithfully
Matthew Tipple, Whitley Bay

Dear Matthew
1. The Commodore Music Expansion System is excellent value at its new price. It is not comparable to the Rainbird product which is a piece of software. Commodore's system contains a keyboard and other goodies. You could use both *(if you had the cash!)*
2. Each card must be separate as they go into the comp sack for each different competition. However, you can send the postcards all in one envelope, if you wish.
3. We have done that if you've noticed the recent reviews of California Games etc. We're still hoping for suggestions for new ratings.
4. and 5. Thanks for the praise. You must be a man of taste and judgement!

Dear CCI
Could you please tell me which are the top best selling computers in the world and in the U.K. Why do most shops sell Amstrad, and why aren't there as many Commodore magazines as there are of Amstrad. Finally my friend wants to buy a CBM computer. Which one would you recommend he should buy — a 64, a 128 or an Amiga?
Yours Sincerely,
A Commodore owner.

Dear Commodore owner of Isleworth
The top best selling computer in the world is your good old 64. It is estimated that as many as 10 million have been sold. In the U.K. the Spectrum and the 64 are about equal. No more shops sell Amstrad home computers than sell Commodore — but more sell the Amstrad PCs — which are not really home computers. That's also why there are more Amstrad magazines because several of them only cover business for the Amstrad PC. Well if your friend has got enough money, go for an Amiga. It's the machine of the future. But you can buy a 64 for under £150. Great value!

Dear CCI
Please can you tell me the name of some thermal printers, that will work with or without an interface on the C64 at round about £100. Could you also tell me whereabouts I could get the C64 Programmers reference guide at a reasonable price in the Leeds area.
J. Tobin

Sorry, we don't know of any thermal printers at that price. Leeds CCI readers are you listening? Can you help?

Dear CCI
I am writing to you for one specific reason which I am sure requires your personal attention.

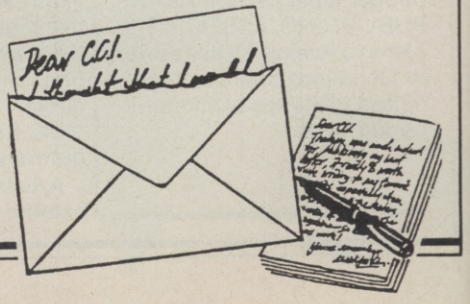
I was browsing through your June edition of CCI and I stumbled upon the Write-on...!!' page and I then started reading it. Upon reaching and reading the article by Peter David Dudley and I thought to myself "This fellow has sure taken his time subscribing to a fine mag like CCI". But when I read the answer to this letter I was horrified by the rudeness of the reply.

I think it is your duty sir, to inform the person who replied that letter that despite having an excellent magazine the reason he is being paid is because there are people subscribing to it. If the readers do not receive the respect they deserve then I am afraid the magazine will not last long.

I propose that this man be severely repremanded for such a shameful act of rudeness.

Let me also voice my utter anger and disgust at this incident.
Husein Gulamhusein, Tanzania

Dear Husein
I really didn't want to return to the subject of Peter David Dudley's boring and self-pitying letter. I know it was that because I went back and read it again — which was even worse than the first time. Later I get accused of having invented it! Well, I didn't invent it and I'm only answering you because the Editor insisted. We have a choice — we can publish a letter or not. Most boring letters never see the light of CCI pages but that letter was thought — not just by me — to merit public attention. There are thousands of books and magazines published every year, loads of rubbishy badly thought out articles and features and stories. Those are professionally written too! Sometimes it is necessary to hold up for public view professional or amateur pieces of rubbish. In this case, it was as much the self-pitying tone as the assumption that the writer's letters ought *to be published by some right. What right is there for below standard letters or anything else to get space? Well, it was published but my reply, I hope, showed that we believe that our readers are not stupid or boring — as you can see from the other letters on these pages and would recognise letters that are. Sorry if* you *were offended,but plain truth should be stated plainly.*



Dear CCI
I would like to tell you, and your readers of the outstanding service I have received from 'Wigmore House' software.

Last week my 'Artist 64' system disk just wouldn't work, the index had turned to scribble. When I asked my children if they could explain it, it was 'blank-look' time. Eventually it was concluded that the disk had either been mistakenly reformatted or left on top of the TV and wiped by its magnetic field.

In despair, I wrote to Wigmore House to enquire about my chances of buying this disk on its own (Artist 64 is a two disk and booklet system), and asking if they had any suggestions.

To my surprise, by return of post I received a replacement disk FREE OF CHARGE, and a very nice letter suggesting I make a Back-up copy before my children have another go.

I find this standard of service so unusually good that I feel everyone should know about this firm.

Conclusions . . . Make backup copies . . . buy from Wigmore House.
Yours astoundedly
M. Wright

PS I am not connected in any way with Wigmore House, this is a genuine unsolicited testimonial.

Well, that's certainly some testimonial! nice to hear that some people in this industry deserve congratulations.

Dear CCI
I am writing to you in the hope that maybe you could give me some advice on choosing a computer.

I unfortunately, have got a Vic 20 and am trying to sell it (with great difficulty). All my friends at school have got other computers such as the CBM64, Amstrad, ZX Spectrum etc.

The swap game and talk about them, and it makes me feel bad when they ask me what computer I've got, I tell them it's the Vic 20, and they laugh at me. IF I do sell my Vic, I intend to buy another computer. I have thought of getting the CBM64, but nowadays comps are being built with much larger memories. As for the CBM128, I am not sure whether it would really catch on, like the 64.

And the Amiga, it's brill, but for 500 quid, it looks like I've got a lot of saving to do.

Amstrad is reasonably cheap, but I really prefer Commodore. I hope you could write to me and give me some advice.
Yours sincerely
Dave, Isleworth
PS I think your mag is great, not too much of any one thing.
PPS Is it true you can upgrade a Vic to a 64?

Dear Dave
Being a fellow Isleworthian, I thought I'd give you some help. As you imply, the three main computers in the £150-£200 bracket are Spectrum, Amstrad and Commodore 64. The Spectrum, although with a large amount of available software, can't be said to be going anywhere with its five year old technology. Interest in the Amstrad from buyers and software houses is getting a bit thin on the ground now. The Commodore 64 is still going strong in every respect and the machine I'd recommend for those out of reach of the 16 bit computers (almost everyone).

Yes, the Amiga is excellent, and yes, it is expensive. The answer to your last question is no, it can't be done.

Dear CCI
Hello my name is Christopher Smith aged 12.

I've thought of an idea that could improve your magazine even more. Believe it or not?

A Play Page, with cheating and pointers on how to win a certain game. For example peole can write in and give pointers etc.

Here are some pointers I would like you to publish on your page please.
(C16)
Kickstart
Just reset your C16 and go into Monitor and type this for endless men (load first). A 28A3 NOP, press return twice and type G2003.
(C16)
Video Meanies
The Sys code is Sys 8330.
Rockman
Sys 4119.
Punchy
Just reset your C16, type Monitor and type this for endless men. A 108A NOP G 1010 (important, load the game first, don't type Run).
Kickstart
The Sys code is Sys 8792.
Jack Attack
Hold down Commodore CTRL then tap return. Press fire and select any screen between 1 and 59.

Yours truly,
Christopher Smith
P.S. Thanks for supporting the C16 and +4!

Hello Christopher,
It is a good idea to have a 'poke' and other games hints page. There are certainly loads of games around that plenty of players need a little help on. We'd like to hear from all you bright hot-shot pokers out there and every poke or hint we publish will get its sender a C.C.I. T-shirt and the best each month will get a year's free subscription to C.C.I., £10 and a T-shirt. And Christopher gets the T-shirt for the best reader's Letter of the Month on the C16 games reviewed in this issue.

A most unusual letter

We don't usually publish letters about other machines but we thought this would be of interest. It is, of course, the Confessions of an ex-Atarian.

Dear CCI
1. At the time of writing I have been an ATARI ST user for eight months, and this past eight months have been a period of most grievous acrimony and anxiety I have ever suffered as a computer user. It is my wish to share my unenviable experience with as many people out there as possible, lest more follow along the sure path to damnation.

2. "Power without the price", but within the third day of my purchase of an ST I began to discover where the price-cutting went. The keyboard is soft and mushy, and for a person using his machine for intensive word-processing and spread-sheet applications the total lack of "touch" has led to many time-consuming and costly mistakes. It has also all but rendered touch-typing impossible. The physical construction of the main ST CPU-cum-Keyboard unit is of then casted plastic (made in Taiwan!), giving a most insubstantial *ick-ick* sound when you squeeze it with your thumb and index-finger. The function keys are rhomboid in shape for decorative purposes, and the familiar user who wants to execute rapid keyboard commands often inadvertently press two function keys together, causing the whole system to "bomb" (see later). Miles and miles of snaking cables linked the CPU to the monitor and disk-drive and the two gigantic housebrick-sized power units; and if a printer is used together, the entire set-up effectively tyrannized the entire table-top of any good-size table.

3. One fine day, my system crashed from the middle of a WP application. It simply refused to work after that! All the power switches are on, *BUT NOTHING HAPPENS! No screen display, no pilot light, NOTHING* After a three-day intensive diagnosis by the very helpful but befuddled dealer, no fault could be found. Willynilly the system came back and began working after that. Horrors! The Operating System, named most unfortunately as Tramiel Operating System (will his ego know no bounds?), is another story all together. TOS is a rude, rudimentary, simplistic, *Neanerthal* pretension to a WIMP working environment. It has this most disgusting habit of crashing at the most delicate moment of an application, leaving the

continued on next page

continued from previous page

astounded user staring at a screen full of mushroom clouds *a.k.a. Hiroshima* Crashing with your data-disk in the drive often leads to the drive corrupting some or most of your data. If your program disk happens to be in the drive at that most unfortunate moment, hundreds of dollars could be literally shredded away by the drive. Being resident in ROM (at no small extra cost), this means all the faults and pitfalls of TOS are branded into your system beyond all possible redemption of later upgrades. When rebooting, the reset switch is totally spurious, as any experienced (for that read *scarred* as in 'Nam) ST-user can tell ye the ST must be allowed at least 35 seconds of total power-down before all the electrons fizzle out of its RAM-chips! Common logic dictates that quality must cost something, and any company telling you otherwise is pulling a very fast trick. All that cheapness *costs*, I solemnly assure you. May I suggest that ST actually should stand for *Sleazy Tricks?*

4. Two years into a computer's life users should be able to see at least some serious application programs. But NO! What we Atarians get is an absolute surfeit of *games, game and games!!* Really inane, low-brow, *viscereal* real-time-shoot-them-up's. Whenever people ask me what sort of computer I have, I would flinch and cower, for everyone know ATARI makes but game-machines, and the ST has turned out to be no different from its 8-bit kin. Atarians go through life branded on the forehead as the Village Idiot, eligible for Schools for the Educationally Sub-Normal. As things stand, there is no equivalent of an ST-program that even compares remotely to Visicalc on the original Apple II (1978). The ST may be the most overly-elaborate hand-eye-coordination training computer the world has yet seen, but useless in real life, being neglected by software houses except those firmly rooted in the tradition of producing games. ST's suffer from a chronic and on-running crisis of software-deficiency, an unforgiveable shortcoming that may prove to be fatal to the very survivability of the entire product line. This is evident from the general ST-user consensus that the ST-Writer, a non-WIMP keyboard-driven WP ported in from the old 8-Bit Atariwriter, remains till this day the *premier* WP-application for the ST! I refer readers of this letter to an article by Ian Chadwick, renowned ATARI specialist and editor of *ST-LOG* and *ANALOG,* appearing in Issue #13 (Apr '87) of *ST-LOG.*

5. If you think my opinions are extreme, not only should I remind you that my opinions were forged out of almost a year's suffering under the ST, you should also know I am in knowledgeable company:

"We remain uncomfortable with the keyboard.... There is no internal fan.... The whirring of the external drive is a continual annoyance.... On the 520ST, we obtained only 5k of working space (for ATARI Basic) .... The earliest critics of the 520ST bemoaned the lack of software .... Most of the early products are port-over's that do not take advantage of the ST's capabilities.... The desktop is far less effective than the Macintosh's, and the keyboard has an awkward feel"
P. Robinson and J. Edwards writing in *Byte* Vol. 11 No.3

"If you switch monitors while the system is on, the ST does a warm restart just as if you had pressed the reset button.... You are limited to 40 folders on the floppy disk, but the system does not tell you when you have exceeded that limit. After you exceed the limit, strange things happen — you may be unable to delete some files from the disk, the system may reset when you attempt to access the disk, or some other nasty quirk may occur .... Copying a file to itself destroys the directory of the disk.... if it happens, the consequences are dire .... Once the system is initailized, you can't change the resolution.-... Most unfortunately, relatively little software exists that really make use of the WIMP characteristic of TOS.... All those cords (power cables) become tangled very easily.... The motherboard of the 520ST has no room for holding the extra Ram-chips (in a memory-upgrade exercise).... a shortage of software that makes use of the desktop interface."
D. Menconi writing for *Byte* Feb '87.

"Practically all the good games crash (with the Atari blitter installed)...."
N. Walker writing for *PCW* Feb '87.

"It appears that there is some doubt as to the reliability of the system. Our dealer reported returning 18 of his 30 systems to Atari, and of course of all the users I know, everyone has experienced at least one hardware fault. The system in the PCW office has gone through one mouse and one monitor in about four months, and the 1040ST's diskdrive is rather temperamental. As a colleague remarked after reviewing the 520ST, *There's a price to all this cheapness.* So far his pessimism has proved to be justified.-... (for developers) there is no way to access TOS on the ST, which is a shame.... Sadly, with the 1040ST, the bundled software has been whittled down to Basic, Logo and Neochrome, which does even less for the ST's image as a capable business machine.... The majority of applications on the ST are games, with business applications a little scarce. ... Any attempt to upgrade the 520ST to 1 Megabyte will invalidate any remaining guarantee...."
N. Walker writing in *PCW* May '86.

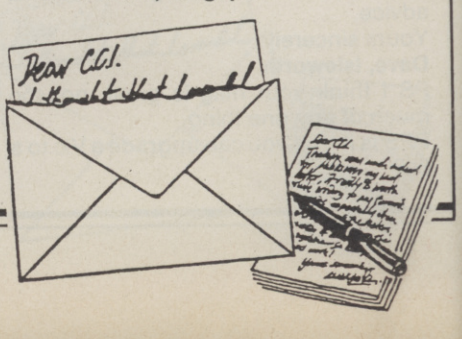
"In that ATARI's survival is questionable, we have decided not to invest in software development for that company. There is very little room in the marketplace for a machine with an independent operating system not compatible with anything else"
D. Kusek (of Passport Designs) talking about the ST in *Keyboard Magazine* Feb '86.

"...95% of our calls are about the AMIGA. We are not interested in the ST. The fact that there is a MIDI port built in is no big deal, since we all know that adding a MIDI port is so easy."
J. West (of Computers & Music) talking about the ST in *ST-LOG* May '87.

"At a recent trade fair, ATARI announced the names of 138 programs being written for its new ST range. Only 44 were actually available."
P. E. DeWitt writing for *TIME Magazine* dated Feb 3, 1986.

6. Having suffered such a devastating disappointment from the initial grandiose promises of the ST, I begin to harbour plans of switching to a computer with an established software library. Warning to all prospective computer-purchasers: when choosing a computer never become beguiled by the fancy specifications touted by manufacturers. Desist from being tempted by low prices — for therein lies unsuspected hidden costs and pitfalls. Specify your own needs, study which *software* caters to that need(s), then buy the computer that can run that software. On such a consideration, the Commodore 64/128 systems came close to the top of my list, of preferences, the top being occupied by the (to me, sadly) costly dream-machines AMIGA and MAC's. Heed my advice, ye thinking people, for it is wisdom hard-won S$5,000.00-later. Ensnare not by *Sleazy Tricks,* the ST is beyond all hope and rescue but you *needn't be.*

Yours most faithfully,
an Ex-Atarian, Singapore



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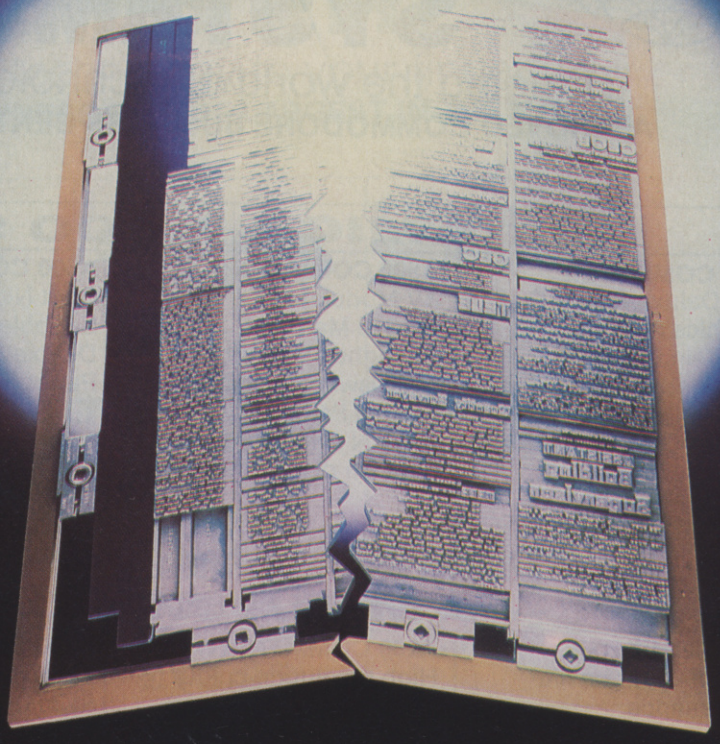

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Dear Rae...

This month your letters are answered by Rae West. Rae is the author of three large reference books on Commodore computers; the latest is Programming the Commodore 64, following Programming the VIC and Programming the PET/CBM. All are published in the UK by Level Ltd. Rae is also published in the USA by Compute! Books.

ICPUG

Dear Rae,

'What's the best way to get in touch with other young people who are interested in Commodore computers, like me?'

R. Duffin, Arlesby, Beds.

ICPUG! These mysterious initials stand for the 'Independent Commodore Products User Group' (or 'Users Group', as some people prefer).

This outfit contains almost everyone with expertise in Commodore equipment, including people with inside information on Commodore, both in the UK and abroad; the regular newsletter is full of meaty information. For those who want contact with other enthusiasts (or just plain users) there are many local groups, locally run, dotted about Britain. And each machine has its own interest group, and software librarian; so if you're an isolated Plus4 owner, for example, you should find a lot for you in the special interest section alone.

To contact ICPUG, and for further information, ring the Secretary, Jack Cohen, on 01-597 1229.

PROGRAMMING PROBLEMS... DATA

Dear Rae,

'I have a problem, whenever I ask my computer to READ I get an OUT OF DATA ERROR. Please what have I done wrong e.g. READ Q$. I have been copied a program out of a book with read in it but I still get an error. What shall if do?'

Jo Gardner, Stoke Newington, N16.

There's nothing wrong with READ Q$, but what you must have is a DATA statement to go with it. It looks as though you've been missing this out — I hope the program from the book was wrong, because there's a chance of a hardware error if a correct program doesn't work as it should.

Try this simple program:

```
10 DATA X,Y,Z
20 READ R$
30 PRINT R$
```

When you RUN this, the program reads the first X into R$, then line 30 prints this, and the program ends. If you type READ R$: PRINT R$ now in direct mode, you'll get Y, as it reads the next item from the list. Do this twice more, and you'll first get Z, then OUT OF DATA ERROR as you get to the end of the list.

I hope this works for you. Assuming it does, you can experiment in other ways: note, though (i) the DATA statements can be anywhere in the program; they don't have to be at the beginning; (ii) RESTORE will make the next READ start again at the beginning of the list; and (iii) it can be important to match up the type data, with the variable in the READ statement. To put this in plainer language, something like READ X will give an error if the DATA isn't a number — X is expected to be a number format.

If you want an application, typically something like DATA BICYCLE, OCTOPUS, BANANA, TYPEWRITER might be used within a Hangman program, and a loop like

```
R=100*RND(1): FOR J=1 to R:
READ X$: NEXT
```

will read a random word from a list of 100 words. Good luck with your programming!

Dear Rae,

'Could you send me the PAINT command for my 128, because it got ripped out of my users manual and I lost it.'

Christopher Hart, Blisworthy, Northants.

Yes. The full syntax is

PAINT [Colour Source],X,Y[,Mode]

X and Y represent the position of the dot around which the area is to be painted in.

The 'Colour source' is a value from 0 through 3, meaning, in order, foreground colour, background colour, and one or other multi-colour. The default is 1, so PAINT 1,20,20 is the same as PAINT ,20,20. The last two don't signify anything in high resolution mode. Finally, the mode (0 or 1) lets you control the edge of the area to be painted; 1 is more restrictive, painting up to any border round the painted region.

There are other features — for example, a + or - before X or Y allows relative coordinates to be used — PAINT 1, +20, +20 paints an area starting 20 pixels away in both directions.

LOAD AND RUN

Dear Rae,

'I've got several autostart cartridges for my 64. I know page 263 of the manual states that at locations 32768 to 32776 there are the cold start vector, the warm start vector, and ASCII for CBM80. Also I know how to load a program in machine-code. But how do I put the two together, loading from disk?'

Kevin Price, Aylesbury, Bucks.

You can't do what you're trying to do... the tasks involved are treated differently by the 64. An autostart cartridge works because, on switchon, the 64 always checks to see if the sequence you've mentioned is present; if it is, the program runs. You can't quite get the same effect with the same software on disk, because you can't load it, then switch off and on. However, an external reset switch, or the restore key, would run the software after loading.

Autostart disk programs work in a number of ways, such as altering the stack so the start address is no longer the normal BASIC prompt, or altering vectors fairly low in memory, again so they point at the new program.

Dear Rae,

'I'm writing a renumber and search-and-replace utility for BASIC programs on the Commodore 64. My first major problem arose about a month ago. When I have got the search and replace strings into the computer, I need to search through the string and replace all commands with their token, unless in inverted commas. After weeks of debugging I've failed to write my own program and returned to the computer's own routines.

I've found the System Input Buffer ($0200-$0258) and routines like IEVAL the 'BASIC token Evaluator'. How do I use these routines?'

R.M. Denby (Age 14), Thornton, W. Yorks.

Yes: the strangely-named ICRNCH and IQPLOP, pointers at $0304 (772) and $0306 (774) respectively, are responsible for tokenising and untokenising a line of BASIC stored from $0200 (512). (If you didn't know, a 'token' is a single byte used by BASIC to store a command like PRINT or GET, to save space). All this is dealt with in my book on the 64, and takes too much space for here. But you might like to try this example:

POKE these values from 838 onwards:

```
72,201,58,208,10,169,13,32,210,255,
   169,32,32,210,104,76,26,167.
```

Now POKE 774,60: POKE 775,3. This simple routine intercepts IQPLOP as it LISTs, replacing colons with returns, so it prints each new statement on a new line.

Although these routines are helpful. I hope you appreciate the complexities of search-and-replace. Remember that new strings will usually be different in length from the original, so the whole of the program above the replace has to be moved up or down memory. You'll need to test for overlength lines. You may need an option to ignore spaces. There might be confusion with upper- and lower-cases. And so on.

Dear Rae,

'I'd be ever so grateful if you could enlighten me on the following points, all concerned with the C128.

(1) How can I get a directory (selective if possible) from within a file "$" character by character is slow.

(2) How can I convert any given number between 0 and 1000 into a form where there are only four significant figures?

(3) Is there a poke which can remove the ? prompt following an INPUT command?

Dear Rae Continued...

(4) I recently found when I enlarged an array from A$(100,10) to A$(500,10) that the program on the whole seemed to slow down. The computer's reaction time to a keypress on a GET $ command became especially slow. Is there any technical reason for this?

(5) One last problem regarding the location $D4 or PEEK(212) in BASIC, the location scanned during a keypress. Is this the ASCII value? When I use D4 followed by the routine at FFD2 to print a character, the characters printed are different.'

(6) I've seen text printed on the border in commercial packages. How is this done?

Simon Borg, Dingli, Malta.

This is a fairly hefty, and advanced, letter; here goes with the answers.

(1) DIRECTORY and CATALOG do, in fact, both work from inside programs in the 128; I can only think you must have tried in Commodore 64 mode. The selective versions also work: you'll need ths sort of thing:

CATALOG D0, U8, "=P" to display programs,*

CATALOG D0, U8, "TEST=S" to display files beginning with TEST. However, there's a lot to be said for reading th directory character by character, because you can please yourself how you print out the data. If it's too slow, you can use machine language, but you may be programming it inefficiently. My chapter on Disk Storage in 'Programming the Commodore 64' goes into this, and gives a detailed explanation of machine language too, (with a special simple example on p. 528). Contact Biblios (0403-710971) or try Boots.*

(2) Ths is quite complex, to do properly. You have to decide whether you always want exactly four figures — for example, 33 as 33.00 — and this isn't clear from your letter. The obvious way is to convert the number to a string, with X$= STR$(X), and operate on that, but in fact it's better, if numbers are being input by somebody, to process them as they are typed in — use GET$ to handle individual characters. Otherwise, you'll get problems with rounding errors as you try to sort out the formatting properly.

(3) You can modify INPUT in various ways; easiest is to insert screenclear and similar characters in the prompt. However, the ? symbol is output AFTER all the prompt, as you've no doubt found. The easiest way to suppress the ? symbol — and one which avoids POKEs, and so makes the program work across different Commodores — is to use

OPEN 1,0 at the start of the program, which opens a file to the keyboard. Then, INPUT#1,X$ takes in its input without printing the question mark.

(4) You've come across the 128's equivalent of a garbage collection delay. Put simply, your computer's memory has so much string information that when you put in a new string, it sometimes runs out of room and has to sort through its available space to decide where new information is to go. Test this with PRINT FRE(1), to see how much free memory is available in your 128's memory for data. If there's a perceptible delay, it's having to garbage collect.

The only cure is to cut down the number of strings in memory, (perhaps you can store several strings in one), or use fewer commands like GET X$, each of which may cause garbage collection to start.

(5) If you type in 10 PRINT PEEK(212): GO TO 10 you can examine the values stored in 212. In fact, the values are used inside the machine to refer to a table, ('keyboard decode table') an each normal key has a different value. So there's no connection with ASCII.

(6) As far as I know, this uses a peculiarity which UK (PAL) TVs have, and doesn't work in the US, so I've personally regarded it as a local phenomenon, not of great interest. (But you could ask to speak to someone technical in the software company concerned).

NEOS

Two correspondents have pointed out that my May letter on the NEOS mouse was misleading:

'It is true the mouse can be used as a joystick by depressing the left button just before switch-on. However, it is entirely incorrect to say that this is a low-budget device. With CHEESE or ARTIST 64 it behaves as a proper mouse as any competent reviewer will confirm'.

Tony Wright, York and

'Neos IS A TRUE MOUSE. It has an internal 4 BIT processor witch (sic) gets its suppy from the +5 RAIL PIN 7. It also uses to opto devices which the internal procesor decodes. P.S. If this does not get printed could you please let me know why'.

C. Jackson, Middlesbrough

One million apologies. GEOS was the problem, not NEOS.

BASIC FOR BEGINNERS — JUNE '87

Dear Rae,

'When I run this, I get a blank screen . . .'

G.E. Simm, Sheffield

Yes. Your program is a string handling routine which is waiting for input. Line 1020 GET B$: IF B$="" THEN 1020 is a loop which continues for ever if a key isn't pressed. This is why input routines often have flashing cursors!

RAM EXPANSION

Dear Rae,

'My 1764 RAM expansion module adds 256K to my 64. Please guide me if I can use C128 programs on a C64 fortified with the above module? Can program and data disks or library disks of (eg) Newsroom be loaded simultaneously? What programs are available for expanded memory 64s? Can Amiga 500 programs work on this enhanced C64?'

M.A. Tabussum, Riyadh, Saudi Arabia

Unfortunately, the answer to most of these questions is no: the 64's memory management is handled differently from the 128, and in any case a 128 (except in 64 mode, of course) has internal routines largely unlike the 64's. So 128 programs will be very unlikely to run. It is possible that programs will be written for memory upgrades (the 128 has two products for this, 1700 with 128K, and 1750 with 512K). But, software houses generally go for universality if possible; they're not anxious to reduce their markets.

Amiga programs can't possibly work on a 64, expanded or otherwise; the entire software and hardware bases are totally different.

ALL GREEK TO HIM

Dear Rae,

'I have a C64 and am looking for a Greek alphabet program. Does anyone know where I can buy one or how I can program one? I know nothing about programming'.

Nick Stathakis, St Gallen, Switzerland.

It's easy enough to design alternative character sets for the 64: what you'd have is a complete alternative keyboard, including shift characters. Or you could buy a program. At each use, you'd have to load and run the program to renew the characters. However, there may be a problem with accents — 'diacritical marks' as they're known correctly.

Any User Defined graphics program should be able to start you off.

UPCI

Dear Rae,

'To help E.N. Daniels. The UPCI is a cartridge & disk programming aid available from Trigsoft of Grimsby (0472-48304).'

R.H. Underwood, New Malden

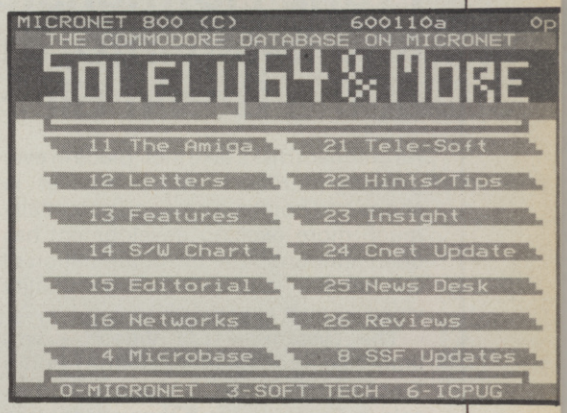
C16 AND PLUS/4 IN EUROPE

Hartmut Hensel, of Neviges, W. Germany writes: 'British TV sets work differently from most West European countries concerning sound. Britain uses the "I" system, continental Europe the "B" and "G" systems. After opening the computer, you will easily identify the modulator box, with its switch marked "I" and "G". For connection of British Plus/4s to European TVs, switch to the "G" position. I should like to send this information to Tony Wright'.

COMMUNICATIONS

Micronet's growing Commodore comms

For those Commodore owners out there who haven't logged onto Micronet, the UK's most successful electronic database for computer owners, here's news of some of the latest developments on the service.



Widescreen Shades

If you're into adventure games then you'll want to know about Shades, Micronet's Multi User Game. Up to 120 players can enter a fantasy world where the other characters in the game are actually real people logged in via their computers at home. The aim is to become a wizard (or witch!), but it's not easy — there's plenty of fighting and treasure hunting to be done before you achieve the ultimate goal. And on the way you could find yourself getting married to another Shadist who you maybe met in the local pub, the Olde Talking Shoppe. If that sounds strange then how about a game of football? In Shades almost anything is possible! Micronet is now introducing an 80 column version of Shades to run alongside the existing 40 column implementation — a plus for serious Shadists who'll be able to benefit from an increased amount of on-screen information and faster game-play.

The same technology should mean an 80 column gateway for Interlink users too. Interlink, Micronet's link into BT's Telecom Gold EMAIL system is currently only available in 40 column mode unless you dial into Gold direct, and that doesn't always give you Prestel/Micronet's local call access.

Teleconferencing

Micronet subscribers have always been keen on chatting to each each — one of the main attractions of the service is that you can communicate electronically with over 70,000 other people — and the firm's dedicated chatline facilities have been extremely popular, racking up millions of accesses every month.

A new service from Micronet called Teleconferencing, allows users to got into "rooms" and chat in real time with several people, three, five or seven at the same time. They can even lock the door and keep undesirables out! There will be rooms for Amiga owners, C64 users, Shades players and so on. To keep you posted a "reception" area will contain details of the different conferences and where they are.

If you're a business user there are serious applications, too. For example four regional sales managers could log into the Teleconferencing system from different parts of the country and meet in a specified room at a pre-arranged time. They could lock the door and hold their meeting in total privacy!

Is there a catch? Well, there will be an extra charge for using the Teleconferencing system, but at press time it hadn't been fixed. Keep reading CCI for more details.

Bizznet and Xtra exposed

Do you need tax and legal advice? It can be expensive, Micronet's Bizznet service might be of help. Bizznet is Micronet's business and personal finance section with information on investing your money, stocks and shares, property, tax, insurance, pension schemes, small business information and so on. Questions sent via electronic mail to Bizznet's experts are answered on-line free of charge.

Already available to Micronet subscribers for over a year, the service is now being launched to the whole of Prestel. But while "Netters" continue to get the service free, Prestel only users will incur an extra charge.

Xtra, which is Micronet's version of a Sunday supplement, with a gossip column, film, record and TV reviews, media news, travel features, letters and more, is also following Bizznet onto the wider world of Prestel. Again, Micronet subscribers won't pay anything extra (no pun intended!), but Prestel users will.

Commodore on Micronet

Although Micronet covers a number of different machines, from Spectrums to PCs, Commodore owners get more than their fair share of the system. The main Commodore area is Soley Sixty Four & More, which despite its name, covers the Amiga, C128 and +4 machines as well as the trusty 64. Regularly updated several times a week, SS64 includes news, reviews, hints and tips, features, letters and much more. Even more important perhaps, is the telesoftware Micronet puts up. At any one time you can download around eighty Commodore 64 programs; a mixture of impressive freebies and commercial titles available in the shops from the likes of Hewson, Elite, Firebird and Precision. Micronet say that on average the put up about five programs a week with a 50:50 split between free and commercial titles.

Commodore is also well represented on Micronet's news pages and on the other general areas, such as Celebrity Chatline — a bit like a radio phone-in programme where Netters can ask guests "live" questions. A recent guest was Commodore's National Sales Manager, Tom Hart, who spent three hours at Micronet's London office answering questions no all things Commodore — guests normally only stay for an hour and a half!

Free Demonstration

If you want to know more about Micronet and have a 1200/75 modem with viewdata software then you can log onto Micronet's free demonstration database. Simply dial 01-618 1111 (South), 021-618 111 (Midlands, Wales), 061-618 1111 (North) or 041-618 1111 (Scotland) and then enter the ID 4444444444 and the password 4444 to gain free access. Once on-line you can look up your **own** local number.

You can contact Micronet on 01-278 3143 or at Durrant House, 8 Herbal Hill, London EC1R 5EJ.

CDV

Can you see and hear the future?

Franz Hofmanstahl takes a look at, and listen into, the electronic future at the Berlin Electronics Fair.

As compact disks take their place in ever growing numbers on the shelves in shops and homes, a new and potentially much more exciting development has been announced — the combination of CD quality sound with high quality video — on a single disk.

The system — CD Video — was launched by Philips at the Berlin Electronics Show. CD Video will go on sale in Europe later in the year for less than £500. CD Video players will take three size of CD Video disks: a 5in disk priced around £4.99 which will contain five minutes of sound and video followed by 20 minutes of sound only; an 8in disk, at around £9.99 with 20 minutes of sound and video on each side and a 12in disk at about £15 with an hour of sound and video on each side.

The 5in disk is designed to let music companies release pop videos and the biggest disk will take full length films. All the leading Japanese electronics companies showed CD Video players in Berlin but seemed hesitant about announcing their release dates.

This seems to be because they are worried about the problems of yet another new music format so soon after the Digital Audio Tape Recorders (see CCI June) D.A.T. is terrifying the music industry for its ability to produce copies from compact disks to the same quality. Their resistance caused the Japanese electronics companies to back off from announcing the release dates for their D.A.T. recorders. Only Sony was willing to come out and say that it would release DAT's late in October.

The cost around £1300 will keep it to a very limited audience initially, and will probably suffer from the early lack of DAT cassettes. CD Video may suffer from the same problem at first. But the exploitation of already produced pop videos may be the hook on which companies will hang their releases.

Other products on show in Berlin that attracted attention were that latest product that has been around 50 years — the TV. There were very large ones, these you hang on the wall, ulta-clear ones and some pocket size TV's that have top quality pictures.

One other improvement on established technology was the growing size of loudspeakers. When you have your CD Video or DAT you can listen to it on a loudspeaker about 2½in deep and 9 feet square — wall to wall sound indeed.

Special Product Announcement

64C Sports Pack

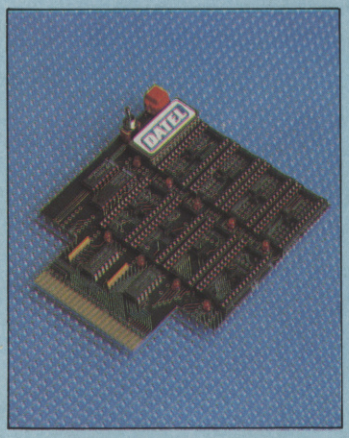
The Commodore 64C will be sold to the general public in the UK over the next four months in a special 'Sports Pack'. The Commodore 64C Sports Pack will include, in addition to the most popular home computer in the world, the Commodore 64, a datasette, 5 sports games — On-field Football, Decathlon, Star League Baseball, Barry McGuigan's World Championship Boxing, and The Great American Cross Country Race; a Quickshot I joystick with autofire; a full size Commodore sports holdall and a free entry to a competition of which the prizes will be for 6 winners to spend the day at Chelsea's Stamford Bridge ground as guests of Commodore and Chelsea directors. The suggested price for the Commodore 64C Sports Pack is £169.00. See your local dealer for information.

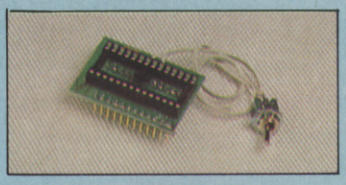
DATEL ELECTRONICS

256K SUPEROM EXPANDER

- Now you can select from any of 8 32K EPROMs instantly.
- 8 sockets to accept upto a 32K EPROM in each.
- On board operating system – no programs to load.
- Program your own EPROMs using our EPROM programmer.
- No need to have loads of cartridges – just make a selection from the Superom menu.
- Directory of utilities on power up.
- Fully menu driven on power up.
- Select any slot under software controls.
- Unique EPROM generator feature will take your own programs – basic or m/c and turn them into autostart EPROMs. (EPROM burner required).
- Accepts 2764/27128/27256 EPROMs.
- On board unstoppable reset.

ONLY £29.99

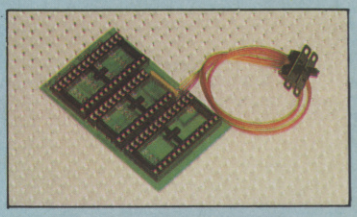




4 WAY KERNAL BOARD

- This board fits in place of the kernal in your 64 and accepts a 16K or 32K replacement kernal giving 2 or 4 different operating systems.
- Just flick the switch supplied to select between systems.
- This is a carrier only – ready to accept your own chip.
- Now you can have all your different systems available at one time.
- Full instructions. - Fitted in minutes.

ONLY £8.99



5 WAY KERNAL EXPANDER

- A multi carrier board accepts up to 3 chips.
- Fits in place of original kernal of 64.
- Three sockets – one for the original kernal plus two others each accepting a 16K chip – that's 5 operating systems available at the flick of a switch!
- Fitted in minutes.
- Full instructions.

ONLY £12.99

RESET CARTRIDGE

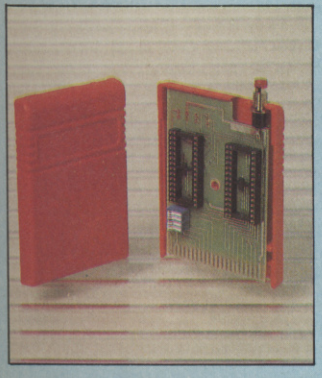
- Unstoppable reset button.
- Resets even so called "unstoppable" programs.
- Add pokes from magazines etc.
- Fits in cartridge port.
- Simply plug in.

ONLY £5.99

QUICKSHOT TURBO™

- Top quality fast action.
- Top & trigger fire buttons.
- Rapid fire/auto action.
- Suction feet for one handed action.
- Extra hardwearing.

ONLY £12.99 for 64/128
ONLY £13.99 for C16



QUICKSHOT II

- World's top selling joystick.
- Top & trigger fire buttons.
- Rapid fire control.
- Suction feet.

ONLY £7.99 for C64/128
ONLY £8.99 for C16

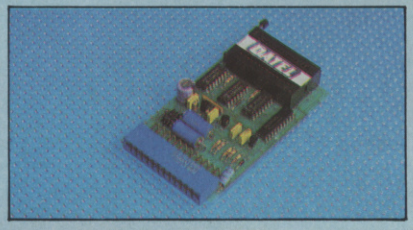
DEEP SCAN BURST NIBBLER™

- The most powerful disk nibbler available anywhere, at any price!
- Burst Nibbler is actually a two part system – a software package **and** a parallel cable to connect the 1541/1570/1571 to 64/128 (state type).
- What gives Burst Nibbler its power? Conventional nibblers have to decode the data from the disk before it can transfer it using the serial bus – when non standard data is encountered they are beat. Burst Nibbler transfers data as raw GCR code via the parallel cable without the need to decode it so you get a perfect copy of the original.

● Will nibble upto 41 tracks. ● Copy a whole disk in under 2 minutes. ● Full instructions.
● Regular updates – we always ship the latest. ● Fitted in minutes – no soldering usually required.
● Full or ½ tracks. ● No need to buy parallel cable if you have Disk Demon/Dolphin etc.
● Cable has throughbus extension for other add ons.

- Whether to choose FastHack'em or Burst Nibbler? Fast Hack'Em is unbeatable value as an "all-rounder" – with nibblers, 1 or 2 drive copy, format, file copy, 1571 copy etc. etc., so if you have a more general requirement perhaps FastHack'Em is for you. Burst Nibbler is a pure nibbler second to none, for the reasons stated. So if it's just making backups you are interested in, there is no other product to beat it.

ONLY £24.99 COMPLETE
SOFTWARE ONLY £12.99 CABLE ONLY £14.99



EPROMMER 64™

- A top quality, easy-to-use EPROM programmer for the 64/128.
- Fully menu driven software/hardware package makes programming/reading/verifying/copying EPROMs simplicity itself.
- Will program 2716, 2732, 2764, 27128 and 27256 chips. 12.5, 21 or 25 volts.
- Fits into user port for maximum compatibility with cartridges/Superom Board etc.
- Full feature system – all functions covered including device check/verify.
- We believe Eprommer 64 is the most comprehensive, most friendly and best value for money programmer available for the 64/128.
- Ideal companion for Superom Board, Cartridge Development System, our kernal expanders or indeed any EPROM base project.
- Comes complete with instructions – plus the cartridge handbook.

ONLY £39.99 COMPLETE

16K EPROM BOARD

- Accepts 2 x 8K EPROMs.
- Switchable to configure as 2 x 8K or 16K or off.
- On board unstoppable reset.
- Full instructions.

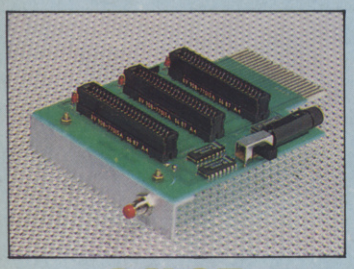
ONLY £8.99

DISK NOTCHER

- Quickly and easily double your disk capacity.
- Use both sides of your disks.
- Simple to use.
- Takes seconds.

ONLY £4.99

DATEL ELECTRONICS



3 SLOT MOTHERBOARD

Save wear and tear on your Expansion Port

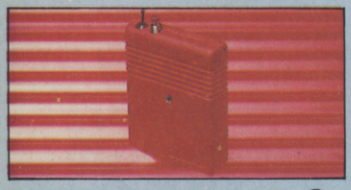
- ❑ Accepts 3 cartridges.
- ❑ Onboard safety fuse.
- ❑ Switch in/out any slot.
- ❑ High grade PCB.
- ❑ Fully buffered.
- ❑ Reset button.

ONLY £16.99

DATA RECORDER

- ❑ Quality Commodore compatible data recorder.
- ❑ Pause control.
- ❑ Suitable for 64/128.
- ❑ Counter.
- ❑ Send now for quick delivery.

ONLY £24.99



SMART CART ™

Now you can have an 8K or 32K cartridge that you program like RAM then acts like ROM!

- ❑ 8K or 32K pseudo ROM.
- ❑ Battery backed to last up to 5 years (lithium battery).
- ❑ Simply load the program you require – then flick the switch. The cartridge can then be removed just like a ROM cartridge.
- ❑ Make your own cartridges including autostart types – without an EPROM burner.
- ❑ Can be switched on or off board via software.
- ❑ I/O 2 slot open for special programming techniques.
- ❑ 32K version has 4 x 8K pages.
- ❑ Some knowledge of M/C is helpful – but full instruction are provided.

8K VERSION £14.99
32K VERSION £29.99

SMARTCART UTILITIES

A series of utility programs for use with Smartcart. Simply load in the program and you have a powerful cartridge. When you have a different requirement – load in another program and you have a new cartridge. The process takes seconds, and can be repeated any number of times.

We intend to release a range of programs. The first available are:

DISKMATE II

❑ all the features of Diskmate II (see ad).

Loaded in seconds – with full instructions. **ONLY £9.99**

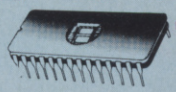
PRINTER IV

Now you can turn your MPS 801 into 4 printers in one!!

- ❑ Alternative character set ROM – fitted in seconds.
- ❑ All four sets have true descenders.
- ❑ 100% compatible with all software.
- ❑ Descender. ❑ Eclipse.
- ❑ Scribe. ❑ Future.
- ❑ Choose any set at the flick of a switch.

"For anyone who uses their printer often this chip is a must. It's quick and easy to use and the end results are impressive" – Your Commodore, Jan 87.

ONLY £19.99

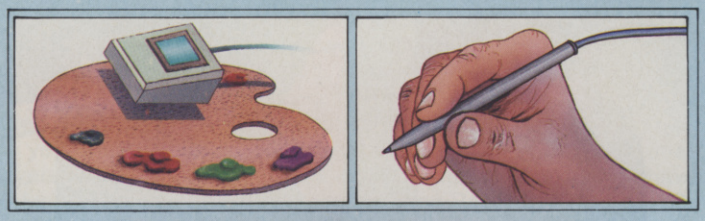


TURBO ROM II

Turbo Rom II is a replacement for the actual kernal inside your 64. It provides superfast load/save routines.

- ❑ Loads most programs at 5-6 times normal speed.
- ❑ Saves at 5-6 times normal.
- ❑ Improved DOS support including 10 sec format.
- ❑ Programmed function keys:- load, directory, old, etc.
- ❑ Return to normal kernal at flick of a switch.
- ❑ FCOPY – 250 block file copier.
- ❑ FLOAD – special I/O loader.
- ❑ Plus lots more.
- ❑ Fitted in minutes – no soldering usually required. (On some 64's the old ROM may have to be desoldered).

ONLY £14.99



BLAZING PADDLES

A complete lightpen/graphics illustrator package.

- ❑ A fully icon/menu driven graphics package of a calibre which should cost much more.
- ❑ Complete with a fibre optical lightpen system for pin point accuracy.
- ❑ Multi feature software including:
  ● Range of brushes ● Airbrush ● Rectangle ● Circle ● Rubberbanding ● Lines ● Freehand ● Zoom mode ● Printer dump ● Load/save ● Advanced colour mixing – over 200 hues!! ● Cut and paste allows shapes/windows/pictures to be saved to/from tape/disk.
- ❑ Blazing Paddles will also work with many other input devices including; Joysticks, Mice, Graphics Tablets, Trackball etc.
- ❑ Pictures can be saved from Action Replay and edited with Blazing Paddles.

Complete Blazing Paddles & Lightpen **ONLY £24.99**

Blazing Paddles available separately for **£12.99**

TOOLKIT IV

The ultimate disk toolkit for the 1540/1541

- ❑ A disk toolkit is an absolute must for the serious disk hacker. Toolkit IV has more features than most for less.
- ❑ DISK DOCTOR V2 – Read and write any track and sector including extra and renumbered tracks. Repair damaged sectors. Look underneath read errors.
- ❑ HEADER/GAP EDITOR – Decodes and displays ALL header information including off bytes and header gap. Rewrite the entire header and header gap. Renumber sectors. Also edit any sector tail gap.
- ❑ DISK LOOK – Sort directory. Recover lost files. Display file start/end addresses. Disassemble any file program directly from the disk to SCREEN or PRINTER including undocumented opcodes. Edit Bam. Much, much more.
- ❑ FILE COMPACTOR – Can compact machine programs by up to 50%. Saves disk space. Compacted programs run as normal.
- ❑ FAST DISK COPY – Copy an entire disk in 2 minutes or less using single 1541.
- ❑ FAST FILE COPY – Selective file copy. Works at up to 6 times normal speed.
- ❑ FORMATTER – 10 second format an entire disk or format any individual track or half track 0 to 41. Redefine any of 30 parameters to create or recreate unique disk formats.
- ❑ ERROR EDIT – Quickly find and recreate all read errors including extra and renumbered tracks or sectors and half tracks from 0 to 41. Even recreates data under errors and allows you to redefine any necessary parameters.

ONLY £9.99

RAM DISK

- ❑ Turn your Smart Cart into a 32K RAM/disk.
- ❑ 32K of instant storage area for files/programs.
- ❑ Load/save instantly.
- ❑ Disk type commands: load, save, directory, scratch.
- ❑ Program data retained when computer is switched off!
- ❑ Full command set with instructions.

ONLY £9.99

DIGITAL SOUND SAMPLER

- ❑ The new sampler allows you to record any sound digitally into memory and then replay it with astounding effects.
- ❑ Playback forwards/backwards with echo/reverb/ring modulation etc.
- ❑ Now with full sound editing module to produce outstanding effects.
- ❑ Full 8 bit D to A and ADC conversion.
- ❑ MIDI compatible with suitable interface. (I.e. Datel unit for £29.99, see ad).
- ❑ Live effects menu includes real time display of waveforms.
- ❑ Line in/mic in/line out/feedback controls.
- ❑ Powerful sequencer with editing features.
- ❑ Load/save sample.
- ❑ Up to 8 samples in memory at one time.
- ❑ Tape or disk (please state).
- ❑ Complete software/hardware package **£49.99**
- ❑ Com-Drum software is available separately at **£9.99** to turn your Sampler II into a Com-Drum system as well as a sampling system.

COM-DRUM

Digital Drum System

- ❑ Now you can turn your computer into a digital drum system. ❑ Hardware/software package.
- ❑ 8 digital drum sounds in memory at one time.
- ❑ Complete with 3 drum kits.
- ❑ Real drum sounds – not synthesised.
- ❑ Create superb drum rhythms with real and step time. ❑ Full editing. ❑ Menu driven.
- ❑ Output to hi-fi or through tv speaker.
- ❑ Load/save facilities.

ONLY £29.99 (state tape or disk)

COM-DRUM EDITOR

- ❑ 24 drum sounds supplied on disk to enable you to construct your own drum kit.
- ❑ Re-arrange sounds supplied with a Com-Drum to make new kits.
- ❑ With sound sampler hardware you can record your own kits. ❑ Load/save facilities.

ONLY £4.99 disk only

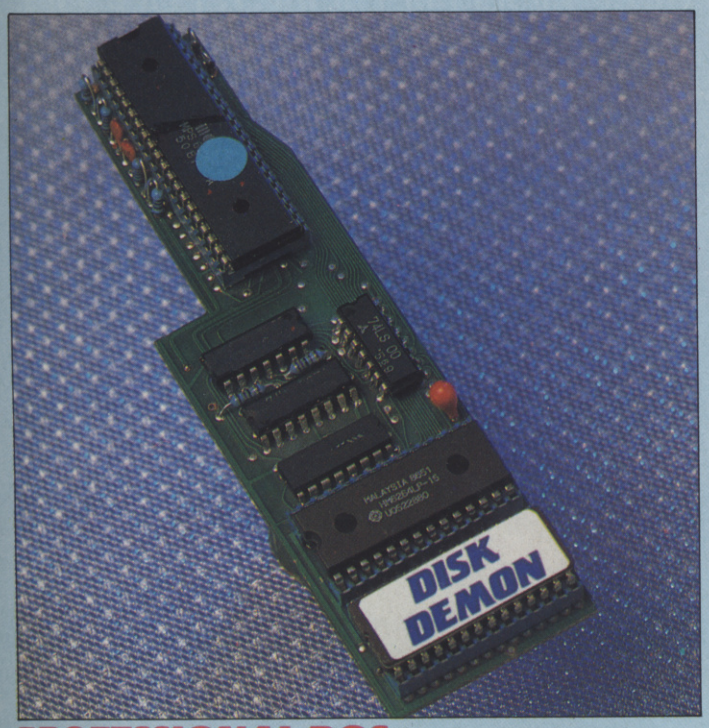
ROBOTEK 64

Model & Robot Control made easy

- ❑ Robotek 64 is a comprehensive hardware/software package which enables you to connect your 64/128 to the outside world.
- ❑ 4 output channels – each with onboard relay
- ❑ 4 input channels – each fully buffered TTL level sensing.
- ❑ Analogue input with full 8 bit conversion.
- ❑ Voice input for voice control.
- ❑ Software features:- test mode/analogue measurement/voice activate/digital readout etc.
- ❑ Excellent value! **ONLY £39.99**

including hardware/software/mic etc. (State tape or disk)

DATEL ELECTRONICS



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❑ SINGLE 1541 MODULE

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- C64 or 12 modes.

❑ 1541 PARAMETERS MODULE

This is the module that gives Fast Hack'em its power. The parameters module contains dozens of "Parameter Keys" that are used to unlock those heavily protected programs. Each parameter is designed for a particular software brand or even a particulaf program. Other copy programs may make strong claims, but without special parameters they just can't cope. Datel will be offering updates to Fast Hack'em on a quarterly basis, featuring 20-50 new parameters plus other improvements as they're made. Prices to be £6 plus old disk.

❑ 1541 PARAMETERS MODULE

- AUTO NIBBLER: Copy an entire unprotected disk in under 1 minute. Features auto track/sector analyzer.
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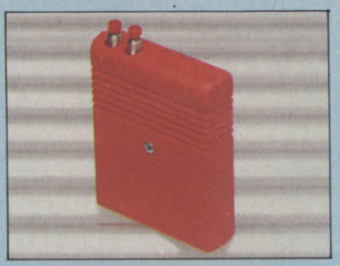

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- ❑ Special switching techniques make Diskmate invisible to the system. Therefore it is a more compatible fastloader than other types.
- ❑ Diskmate II is £14.99.

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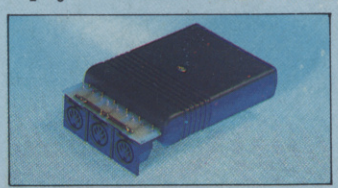
Diskmate II can be purchased on the same cartridge as Action Replay III for **ONLY £39.99**



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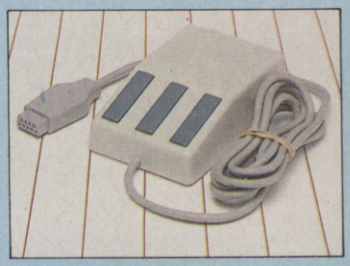

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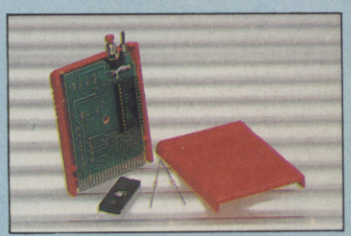

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REPORT ON FINDINGS

Action Replay Mk III is more powerful, more friendly and will back up more programs than any competing utility by taking a 'Snapshot' of the program in memory so it doesn't matter how it was loaded... from disk or tape, at normal or turbo speeds... the results are the same – **Perfect!! Amazing!!!**

STARBASE UPDATE

- Simple to use: just press the button and make a complete backup: Tape to Tape, Tape to Disk, Disk to Disk, Disk to Tape. – THE PROCESS IS AUTOMATIC – JUST GIVE THE BACKUP A NAME.
- All backups will reload at turbo speed independently of the cartridge.
- Dual speed tape turbo system. Programs can load up to 3 times faster than commercial turbos – that's over 10 times normal Commodore speed.
- Freeze the action then view the program with the monitor feature. Add pokes for infinite lives etc. Then restart the game or backup – ideal for customised versions of your games.
- Picture Save. Save any multi-colour. Hires screen to disk or tape. Compatible with Blazing Paddles, Koala, Slideshow etc.
- Fully compatible with 1541, 1541C, 1570, 1571, and ehancer or any CBM compatible data recorder.
- For C64, 64C, 128, 128D (in 64 mode).
- Unique Sprite Monitor. Freeze the Action and view all the Sprites, watch the animations scroll across the screen. Save Sprites to disk or tape. Customise your games by loading sprites from one game to another – then restart the program or make a backup.
- Compatible with fast DOS and Turbo ROM systems.
- Backup process in turbo speed – faster than any rivals.
- Special compacting techniques. Each program is saved as a single file.
- Transfers multistage tape programs to disk – more than any other cartridge – even the extra stages are turbo load – a unique feature.
- Sprite Killer! make yourself indestructible by disabling Sprite collisions in games.
- Fast disk format (20 secs).
- Built-in unstoppable reset button.

PLUS Built In FASTLOADER

Action Replay III even has a built in disk fast loader which speeds up loading 5 times. Uses no memory – invisible to the system. You could pay £20 alone for this feature.

WARP 25 BREAKS THROUGH THE 10 SECOND BARRIER!

Action Replay III now comes with an amazing new* Disk Bootloader that will reload your backups at TWENTY FIVE TIMES normal speed. The fastest disk turbo yet devised!! There are NO CATCHES. WARP*25 works with ALL your games. Works with any disk drive. No preload required – No hardware modifications necessary – No user knowledge required – programs load INDEPENDENTLY. LOADING TIME – 9.8 SECONDS (for a typical game saved by WARP*25 in conjunction with ACTION REPLAY III). This time is for the COMPLETE load process from start to finish. Reload is entirely INDEPENDENT of the cartridge or any other hardware.

Compare these (accurate!) figures for some rival backup systems:

SYSTEM	LOAD TIME	PROGRAMS PER DISK	CARTRIDGE REQUIRED?
ACTION REPLAY MK III SAVED WITH NORMAL TURBO	25 SECS	THREE	NO
ACTION REPLAY MK III SAVED WITH WARP*25	9.8 SECS	THREE	NO
FREEZE FRAME (MK IV)	40 SECS	TWO OR THREE	NO
FREEZE FRAME (LAZER)	25 SECS	TWO	YES
EXPERT SYSTEM	30 SECS	THREE	NO

All purchasers of Action Replay III will receive WARP*25 FREE with their cartridge. Existing Action Replay III owners can obtain WARP*25 Disk turbo by sending £2.50. post free. (No need to send your cartridge). OR obtain it FREE on the Enhancement Disk (£7.95).

THE ACTION REPLAY ENHANCEMENT DISK

The best collection of tape to disk transfer routines for nonstandard multiload programs (eg Dragons Lair I and II, Championship Wrestling, Summer Games, Ace of Aces, Gauntlet, Supercycle, Marble Madness, World Games). 31 titles in all. Uses our unique parameter system. No user knowledge required. Turboload throughout. NOTE: Standard cartridge transfers normal multiloaders eg Winter Games etc. etc. Disk includes file copy and disk backup utilities.

PRICE £7.95 with FREE! Multicolour Slideshow for display of loading screens, hires pictures etc. saved by Action Replay. Great entertainment!

PERFORMANCE GUARANTEE

100% Success? Rival Claims? Who's Kidding Who? Action Replay Mk III will backup any program which any other cartridge can backup – and more! It also has an unmatchable range of features. Consider 'Freeze-Frame' for example, which uses more disk space, saves at slower speed, has slower tape loader, has no built in disk fastloader, no picture, Sprite or restart features and costs £10 more than Action Replay. So who's kidding who? Buy Action Replay Mk III. If you find that it does not live up to our claims return it within 7 days of receipt and your money will be refunded.

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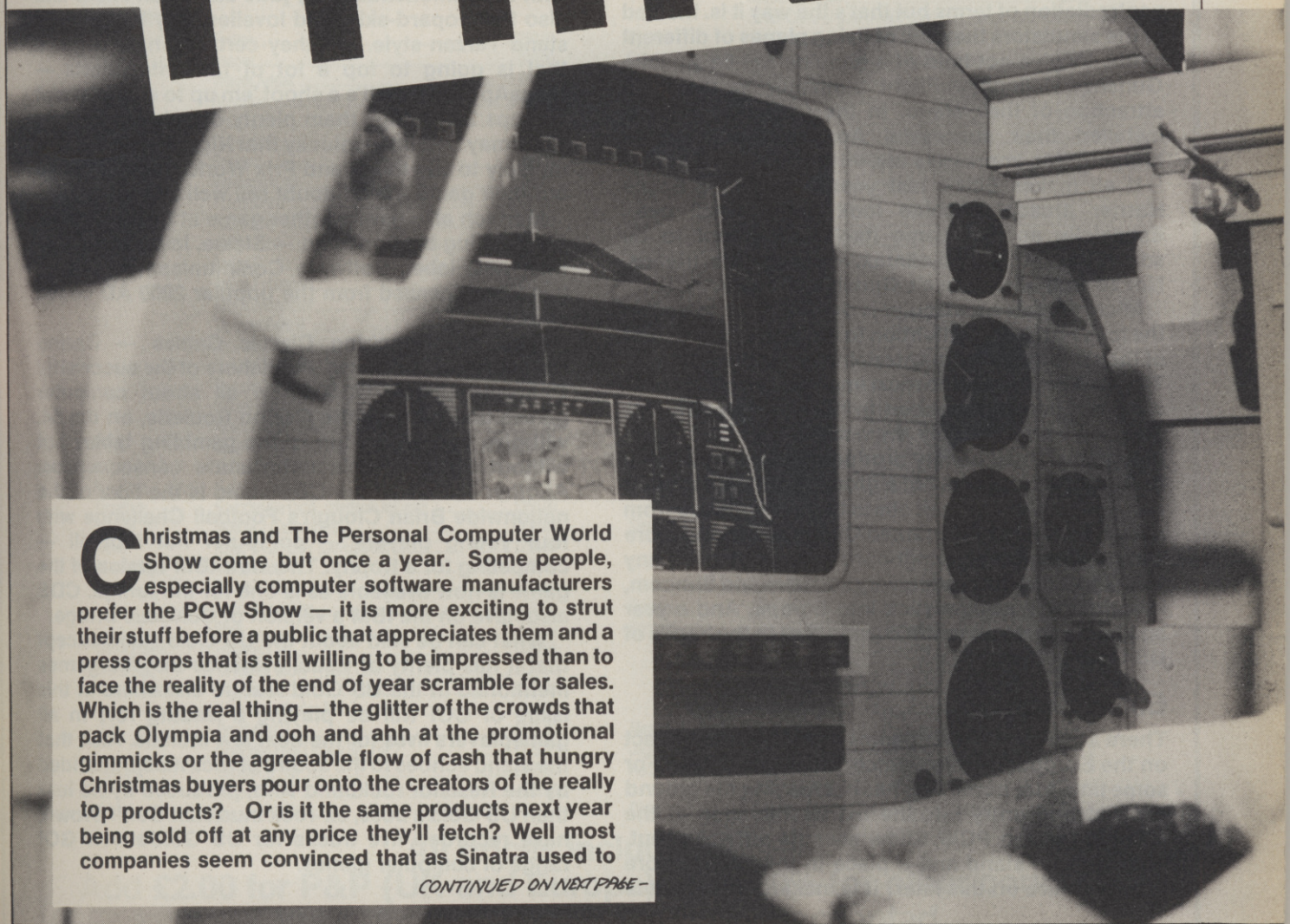
THE REAL THING

Zack Skinner takes an overview of Europe's biggest personal computer show of the year.



Christmas and The Personal Computer World Show come but once a year. Some people, especially computer software manufacturers prefer the PCW Show — it is more exciting to strut their stuff before a public that appreciates them and a press corps that is still willing to be impressed than to face the reality of the end of year scramble for sales. Which is the real thing — the glitter of the crowds that pack Olympia and ooh and ahh at the promotional gimmicks or the agreeable flow of cash that hungry Christmas buyers pour onto the creators of the really top products? Or is it the same products next year being sold off at any price they'll fetch? Well most companies seem convinced that as Sinatra used to

CONTINUED ON NEXT PAGE -

THE REAL THING

CONTINUED FROM PREVIOUS PAGE

sing "you can't have one without the other." That's why they splash out their cash in huge amounts to make an impact this year on an anticipated 60,000 plus eager beaver visitors crowding two floors of a draughty hall in an inconvenient place on the west of London.

In the next issue of CCI, we'll be able to give you the full story but publishing dates being as inflexible as they are, we decided that we couldn't bring out this month's CCI a couple of weeks late to give it to you here, so we decided to give you a last minute overview that would provide a sufficient taste of what it was like to be there.

No matter how good the product is, whether it be hardware or software, unless it catches the public's eye and imagination, you might as well go bury it. And competing with all the big spenders, no matter how much cash you lavish, you've got to have pizazz or you're wasting money and time. Wild Bill Stealey and his UK lieutenant Stewart Bell — who got his first taste of Microprose just this time last year — know very well indeed how to grab the public's awed gaze. With a really spectacular coup they have created a starring role for themselves, or rather Microprose, at the Show by bringing along a *real* simulator. Sorry if that is a contradiction of terms but that's the way it is. Instead of the simulators they sell of flying planes of different kinds, they've got hold of a genuine AH-64 Apache Gunship Helicopter Flight Simulator as the main attraction of their stand. In the (real) simulator is installed their successful Apache simulation — bringing it to impressive life.

It all makes Elite's last year's hit with a Space Harrier arcade machine look pretty small beer. Especially as that game itself turned out to be something of an anti-climax, winning ew friends. Not so with Microprose's Gunship of course.

Microprose's spectacular is not there just to amuse the fans but to draw attention to the increasing weight of their influence in the entertainment software world. They are now one of the most important companies — a distribution organisation in not-so-miniature. For they represent not only themselves with their internationally famed quality products like Silent Service and other simulations but a growing number of other companies too. On their stand there is software from Origin, creators of the famed Ultima series and more recently Autoduel, Springboard another US company well-known for its productivity software and Suncom, introducing a new joystick into Europe. And a year ago Microprose were still leaving it all in the hands of US Gold . . .

E.A.'s debut

There are other US companies making a new impact on the European scene, notably Electronic Arts. For some time Electronic Arts has been laying the ground for a strong entry into the marke this side of the Atlantic but the PCW Show sees its official debut. With its own stand and a place in the Commodore Village (more on this later) it is making its presence felt on the European scene in the forceful but dignified way that the Trip Hawkins style requires. Relying on a huge list of products, some that have been seen before when E.A.'s stuff was handled by Ariolasoft but cutting their prices to make them more attractive, and also introducing some really juicy new home computer software, especially for the 64 and Amiga, the Electronic Arts name is being built up to become an instant and major competitor right across the formats.

It is also presenting new products from its affiliated labels CRL and Nexus. For the growing number of Amiga owners, E.A. is emphasising the availability of Bard's Tale I. Instant Music and classics like Marble Madness, one of those games enjoying a price cut, along with latest releases Chessmaster 2000 and Chuck Yeager's Flight Simulator and Earl Weaver's Baseball. E.A. clearly like big names . . . For the 64, there is World Tour Golf, Chessmaster 2000. Legacy of the Ancients and Pegasus. CRL have got Mandroid and Traxxion for the 64 and Tau Ceti for the IBM. Nexus have got two main titles Blazer and T Runner both for the 64.

Biggest Shoot 'Em Up?

Martech who are thought to be considering joining the affiliated label stable of Electronic Arts probably find it hard to repeat the impact they made last year with the demonstration by judo star Brian Jacks and also the leopard-skin clad lovelies they had at their stand Tarzan style. But they certainly have a game that is going to top a lot of favourite charts — MegaApocalypse. It's a shoot 'em up to end all shoot 'em ups that brings them plenty of public attention. They may be a little unlucky that Nigel Mansell is now unlikely to win the Grand Prix World Championship but their game will no doubt sell well anywy.

Martech also have another game at the Show they are building big hopes on — Slaine, launched under their new label, Software Communications. Slaine has been licensed from the popular 2000 AD comic strip.

CDS are launching Classic Games — Casino Roulette and Mah Jong. Publishers of the successful Colussus Chess, CDS know all about computer games and promise the Casino Roulette, on the 64, will give you all the fun of the gambling tables but without the inevitable unfortunate consequences. Another feature at the CDS stand is the final of the nationwide Brian Clough's Football Challenge with four young players — computer not football — competing for a trophy. The new IBM version of the game is now available as is one for the Amiga. CDS also have on the IBM a version of Colussus Bridge.

What can be said about the US Gold stand except that it has plenty of visual evidence that the games mentioned in the US Gold feature elsewhere in this issue of CCI will be playing a leading role in all gameplayers lives for the next few months. Also that the stand echoes to the sound of rock music provided by the Resistor rockband who, produced by no less than US Gold's boss, ex-rock musician Geoff Brown, have recorded five tracks for US Gold's new GO! range of computer games.

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Arcadia's Amigas

Mastertronic have changed in the last year from just a creator of cheapo games to a much wider based organisation. They bought Melbourne House a long established and successful fullprice software and books publisher and founded Arcadia, a company selling, renting and perhaps most important of all creating games for arcade machines. As result Mastertronic under its different names and labels has become a power in other fields. This is shown by the number and quality of the Amiga titles they are bringing out. On their stand a whole load of Amiga titles are bruited including the highly successful 64 game Feud and a conversion of Jeff Minter's Mutant Camels.

Live Piranhas

Piranha, as is appropriate, is getting bigger by swallowing up things. It seems to have doubled the size of its standby,eating up the next door one as well. But on their stand some interesting star guests are to be found including a tank of live piranhas, Yogi Bear, and Roy of the Rovers too. They have a number of competitions including a Mr Weems high score and a Wheel of Piranha, run every two hours. No, the prize is not to jump into the tank! It's Piranha's 1st Birthday, so naturally there is a party.

Successful especially in the C16 field, Newcastle based Tynesoft comes south with some new strings to its bow. It is bringing out several versions of Winter Olympics including a C16 version and also one for the Amiga. A rolling video demonstration gives the flavour of both of these.

Of course the PCW Show is not only about seeing things. Many, perhaps even most of the visitors want to take more away than brochures and publicity material that just makes your mouth water. So plenty of companies sell off products cheap. All Martech's recent titles such as Nemesis the Warlock, Catch 23 even MegaApocalypse sell there at reduced prices.

Prism Leisure, with one of the larger stands at the Show with a frontage nearly 14 metres in length all stacked with software and peripherals at lower than normal — some would say natural — prices. Including, of course, the everlasting Football Manager, acquired when they bought out Addictive Games and the newly re-released International Karate now at a budget price. Will we ever be free of that one?

CBM Village

And what about Commodore? Well, taking their courage in their wallets, Commodore made the decision to be bold and create their own village to accommodate the size of the impact CBM wants to make with the Amiga and to gather around them the companies that can add lustre to the Amiga with their own products.

In the Village, apart from the many demos running for CBM's and the visitor's benefit on the new Amiga 500's and 2000s, companies that might not get too much of a viewing among the huge competing stands can show off their products. Electronic Arts — yes they are everywhere aren't they these days? — with

demos of Deluxe Paint II — the first version now being bundled with the Amiga 500 — and also their Deluxe Music; The familiar Metacomco, creators of the Amiga's Intuition, featuring AmigaDos on the 2000; Taurus with Acquisition — at last — Precision with Superbase Professional, Nucleus with their GEFICS (General Factory Information System), Burocare with Artisan, an artist's graphic station and a programmable dataswitch. The remarkable CADvision system and Scicom with their touch sensitive Amiga screen and Haba Systems now well established distributors of Amiga products.

CCI? Well, as we are the Commodore magazine regarded as the one that actually tells its readers something on all aspects of the Commodore world, CBM asked us to man — and woman — the information desks at the Commodore Village, just to make sure that visitors really were sent in the right direction.

Of course what we've told you covers only a taste of the literally hundreds of exhibiting companies with everything from what you need to keep your monitor screen clean to the latest in home hardware, from glamorous blonde in tight T-shirt to earnest techno-freaks discussing abstruse computer languages. For anyone with the slightest interest in personal computing — and that very wide term also includes business computers that let individuals dominate their working environment — and especially those whose living is closely linked with what the home buyer will like and want to buy — The Personal Computer World Show is more than just another exhibition, it's more than birthdays or parties, better than Christmas, like a US presidential convention without the politics; it's the place to see what's happening with, and to your competitors and let the world know how successful your products are going to be and what a great guy or terrific company you are. It is a place to meet the people who buy the products that pay the overdraft — a psychological shot in the arm for everyone in the personal computer business — The Real Thing!

Z.M.S.

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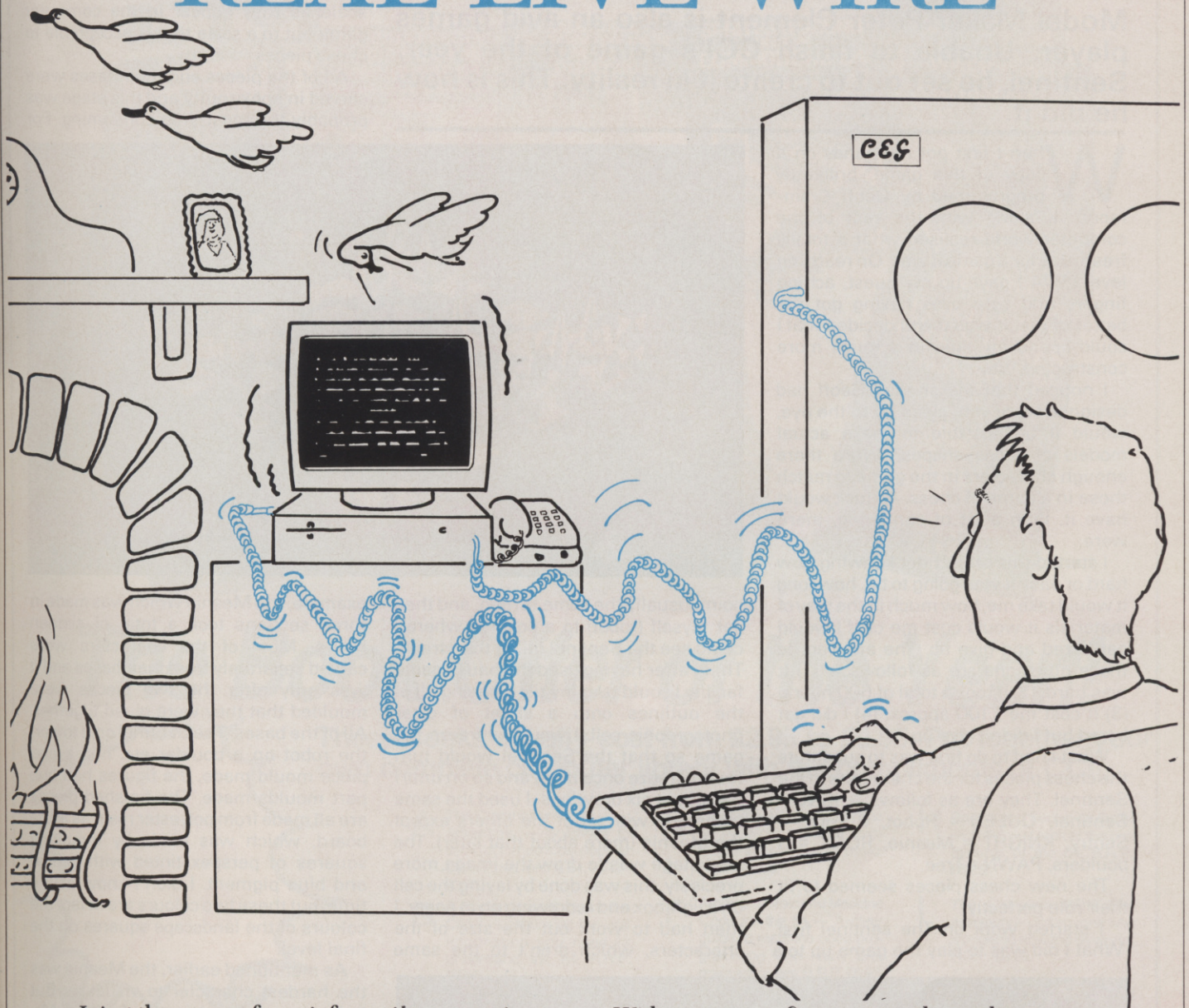

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The Sentinel Chess Set

Model Maker Peter Clement is also an avid games player. Unable to finish CCI's game of the year, Sentinel, he set out to create it in reality. This is how he did it.

When I first got my hands on a copy of this game, brilliantly programmed by Geoff Crammond, I, along with the rest of the computer world realised what a totally fresh idea for a game it was. On reaching level 2974 I gave up my quest, aching fingers and sore eyes having got the better of me. It was then I decided that I could spend my time in a much more constructive way.

I noticed that the shapes Geoff had designed were very pleasing to the eye, would it be possible to make actual models of those shapes? Were there enough characters in the game to match those in a game of chess. As luck would have it, with a bit of contriving, there were.

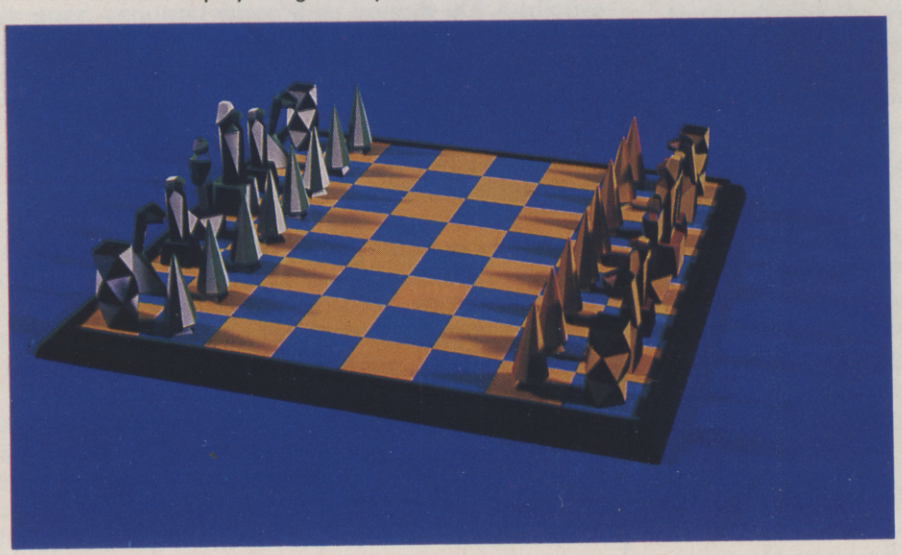
I started this project not knowing how hard or easy it was going to be, how long it would take me, how much in the way of materials it would cost me or if I would get bored and give up. The answers to those questions are as follows:— (1) It was hard. (2) It took a total of 600 hours. (3) It cost me £100 approx. (4) I did get bored but I didn't give up.

What I had to do first was to substitute the chess pieces for the characters in the Sentinel. They are as follows:— KING = Sentinel, QUEEN = Robot, BISHOP = Sentry, KNIGHT = Meanie, ROOK = 3 boulders, PAWN = Tree.

The new chess pieces seemed to fit their role perfectly.

I started work on The sentinel first. What I did was to play the game up to a point, usually the same screen, and then get myself (robot) to a position where I could see the Sentinel filling the screen. Then, after having used the pause game facility I could take my time tracing all of the outlines onto a sheet of clear photographic cell. I would unfreeze the game so that the Sentinel would turn round, freeze once more and so on until I had about six drawings. I used the same technique with all of the others except the Meanie (more about that later). The next stage was to draw the image more precisely, this was done by laying the cell on a lightbox and redrawing on to paper. I then had to work out the size of the characters, which aren't to the same scale as they appear in the computer game but to a scale that is acceptable to chess pieces.

All of the pieces and their bases were carved in epoxy putty and this stage was probably the most time consuming. For example, the Meanie which was made in three sections took a total of sixteen hours. Most of the characters were carved separately from their bases and it was only after the two pieces were moulded that they were glued together. All of the bases, The Sentinel on a tower, the robot on a boulder etc. had a one piece mould made, the figures had two part moulds made. The finished pieces are all made from polyester resin as is the board, which was made by moulding squares of perspex tinted with yellow and blue pigment. I didn't know at the time, but these two colours are in fact the colours of the landscape squares on the final level.



As mentioned earlier, the Meanie was the hardest character to visualise. But help was at hand in the form of Mr. Crammond who very kindly sent me his original working drawing.

Apart from being a very unique chess set in that it is from characters created for a computer game, it is also unique because of its bright colouring. I could have stuck to the normal two tone (black and white) but decided to paint the pieces as they appear in the game itself. I chose for one side, red/yellow/black and for the opposition green/white/ black.

This project has kept me busy for some six months but I believe it has been worthwhile. The finished chess set is not for sale, nor do I intend to make another one. If however someone offered me the price of the new Archimedes I might just be tempted.

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PRINTKIT IV
New Life for the MPS803

At last, an upgrade for the MPS803 Printer that not only gives true descenders but also the luxury of a second italic character set, bold printing, single pass underlining, and improved speed. A necessity for every serious MPS803 user.

The MPS803 is one of the Commodore range of printers that lacks true descenders in its character set. This has long been a cause of frustration to owners who want to be able to produce acceptable print for business or personal ue but the only solution to date has been the adoption of software packages with their inherent disadvantages, particularly with regard to speed. Now from AVON PRINTER TECHNOLOGY (APT) there is a hardware solution that not only provides true descenders but also gives other desirable features such as bold printing, an alternative character set, and single pass underlining. And because it is a hardware solution, fitted to the printer itself, it actually speeds printing up.

So why wasn't a product like this available earlier? After all the MPS803 has been around for some time it was sold bundled in with the PLUS/4 at one time). To understand this we need to look back at the history of the MPS803. When Commodore designed it they took a proprietary print mechanism and designed their own internal Printed Circuit Board. In doing so they went for compatibility with earlier printers but failed to realise the full potential of the print mechanism and significantly used only 7 of its available pins.

Had the MPS803 Printed Circuit Board design been like that of other printers (e.g. the MPS801) then the solution might have been an upgrade requiring a simple change of a ROM. Unfortunately the MPS801 design was such that the operating system and character set were masked onto the CPU and nothing so simple as a chip change was possible. This technical issue held the industry up until APT noticed that Commodore (for their own mysterious reasons) had made provision for an upgrade in their original design of the Board. It took fourteen months to complete a design but the end result is a very powerful upgrade package.

So what does "PRINTKIT IV" consist of? Its components are two Integrated Circuits (an EPROM and a tri-state octal latch! That's what they call it.), sockets to mount them in, a resistor and a switch. You will guess from this that some soldering is required and you would be right. Both sockets, the resistor and the switch need to be soldered into place. If you have the skill to perform simple soldering however fitting the kit is easy, largely thanks to the comprehensive manual provided by APT which takes you step by step through the dissasembly of the printer (which actually only needs 4 screws and 6 plugs to be undone). Neither is it difficult to locate where the components should be mounted because Commodore has marked out everything clearly within their original design of the Board.

What do you get when you have fitted "PRINTKIT"? Well as described above you automatically get true descenders on the normal character set. It's amazing in fact how much difference this one facility alone makes. You also get an italic character set — a very useful alternative. The bold option, which is achieved by double striking, doesn't quite achieve NLQ quality though it comes close, and the single pass underlining provides a simple but necessary facility that MPS803 owners have always missed. All of these facilities are invoked by simple character commands. Remarkably they can be mixed within a line or even for adjacent characters.

Incidentally the switch provided acts as a way of switching back to the original printer mode should there be any need to do so.

As an integral part of their design of the upgrade APT have taken the opportunity to speed up the operation of the printer. This was not difficult to achieve because Commodore had not really used all the capability of the original proprietary print mechanism. Though printer speeds are notoriously difficult to quantify any MPS803 user will see a marked improvement once they fit "PRINTKIT IV".

It is worth saying a few words about compatibility. Firstly, it should be noted that the upgrade is to the printer itself which continues to respond to standard Commodore commands exactly as it did before being upgraded. This means that if the printer worked with a particular host computer prior to the upgrade then it will still do so afterwards.

For those planning to use the upgrade with a Word Processing package the situation is straightforward. Provided that the software has the ability for simple customisation in the characters it uses to invoke facilities then there is no problem. It is believed that this is easily achieved on all major software packages sold (SUPERSCRIPT and TASWORD for example both allow this).

In summary, "PRINTKIT IV" is a very impressive upgrade kit for the MPS803. Providing that you have simple soldering skills then you should have no difficulty in fitting it. Once you have then you have given your MPS803 a whole new dimension and removed for ever that irritating Commodore character set.

Price: £30

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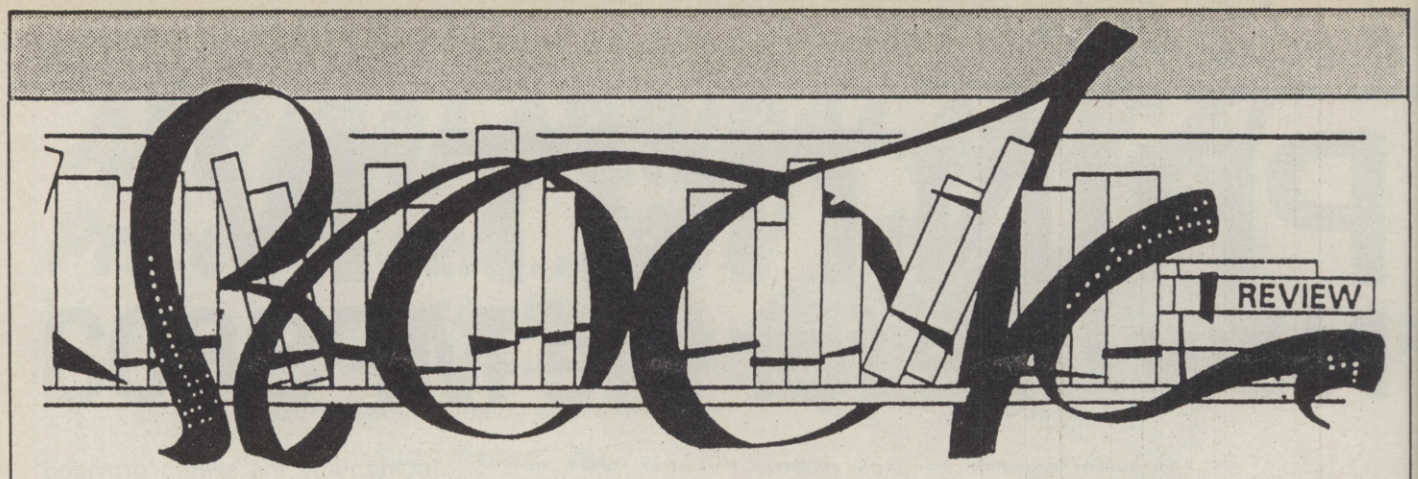

Speaker For The Dead

Orson Scott Card (£2.95)

The natives of newly-discovered planet Lusitania are, due to their porcine appearance, nicknamed 'piggies' by the scientists entrusted with their care. The 'piggies' are treated with extreme caution for under no circumstances must they be told anything about civilised society lest it contaminate their culture and accelerate their natural development and also because the 'piggies', who appear friendly and innocent, have a nasty habit of eviscerating their best friends among the scientists and not only showing no remorse for their anti-social behaviour, but also appearing to think that they've done the unfortunate victims a favour!

In 'Speaker For The Dead', the piggies, the scientists — two of whom are thirteen-year-old geniuses — and Ender Wiggin, the 'Speaker' of the title, are created with the expertise one expects of an award winner of both the Nebula and Hugo trophies for science fiction. (This book, too, has been nominated for a 'Hugo').

Scott Card's skill is in providing a planet where nothing is what it seems and everything is suspect. The 'Speaker' — a kind of priest who eulogises the dear departed — is asked to come to Lusitania by one of the thirteen-year-olds, Novinha, whose foster-father is one of the scientists who has been summarily despatched by the piggies, and Ender Wiggin is not all he seems, either. In his youth he committed xenocide by destroying a world of aliens, (called 'Bugger', would you believe?) Trying to atone for his crime, done to protect civilisation of course, he has retired to a Scandinavian-type planet called Trondheim, and almost become a recluse. He manages to keep in touch with the other planets of the '100 worlds' by a computer terminal which is implanted in his ear! Very useful. What about it Commodore?

'Speaker For The Dead' is a SF detective story. Why do the piggies kill their friends. Why are piggy females never seen? And why has Ender Wiggin been concealing the fact that he has secreted on Trondheim a Hive Queen and a cocoon full of Bugger eggs?

Orson Scott Card provides the answers in ths epic of other-worldliness. A book that, once started, is hard to put down until all is revealed.

Fiasco

Stanislaw Lem (£11.95)

Many computer programs today come with the WYSIWYG, (what you see is what you get), guarantee. Dust jackets of books don't come with any such promise — more's the pity.

Stanislaw Lem's new book, 'Fiasco', has a jacket which announces that the author is 'one of Europe's most prolific and admired writers' and that he is also 'one of the great stylists of contemporary SF'. Mr Lem is certainly prolific. His many books, not all of which are science fiction, have been translated into over thirty languages.

'Fiasco', is the story of a spaceship, the 'Hermes', and its crew — all from Earth — who are sent to make contact with the planet Quinta. The 5th planet in the Zeta solar system, Quinta is the only place on which the 22nd century astrophysicists have discovered a life-form, although of what kind no-one is sure. Nor if, when contacted, it will be friendly or otherwise.

The crew of the 'Hermes' consists of — among others — a Dominican monk, who is a delegate of the Vatican and who is troubled by the morality of the whole endeavour; a Japanese physicist/philosopher, whose chief aim seems to be to placate everything and everybody in sight; the captain of the craft, who is on the edge of a nervous breakdown; an all-seeing, all-knowing computer called 'DEUS' and a young, daredevil pilot who has joined the crew almost by accident. It is this man, Angus Parvis, who seems to be the main character. I say 'seems to be' because the story is his until page 50 of Part 1, — then he's killed off!

That gave me my first doubts about 'Fiasco'.

One of the first things novice writers are taught is 'have as your main character someone with whom your reader can 'identify'. So the death of Angus Parvis causes the reader an identity crisis right away. Particularly so in this case as Part 2 gives us a whole new set of people to deal with. Now with whom do you identify?

But all is not lost. Angus Parvis's body which in Part 1, a hundred years earlier, was 'vitrifaxed' — which means all the body's fluids are instantaneously congealed into ice in the space of a split second. In fact, eight other vitrifaxed bodies are found and rescued as well but, unfortunately, only one can be resuscitated and that one has to be made up of parts of the others in a kind of surgical 'cannibalism'.

So Angus Parvis is resurrected. Only this time he, too, is suffering an identity crisis because memories which belong to the others — and in particular Commander Pirx, his old training instructor from whom most of Angus's spare parts have come — keep intruding into his 'new' brain. Oh! and, in addition, Angus has a new name because he can't remember his previous one. He's now Mark Tempe.

If Stanislaw Lem had stayed with the story of Parvis/Tempe, or even with the journey and consequent arrival of the 'Hermes' at Quinta, 'Fiasco' would have been a far more interesting book.

Giving the book such a title is asking for trouble. The dictionary definition of 'fiasco' is 'an utter failure'. I wouldn't say Mr Lem's book is that — but it's not far short of it.

D.M.

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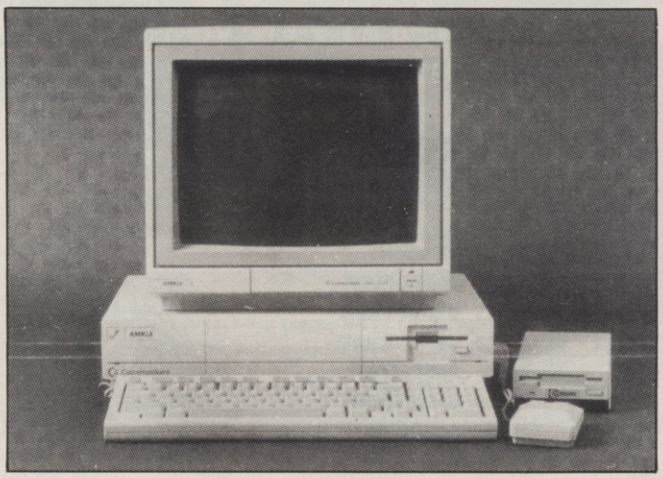

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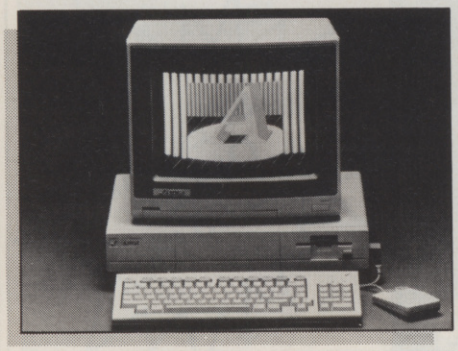

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New "smart" card and optical card technologies will hasten the arrival of the "dating card", according to the project manager of a new 266-page study. Matthijs Moes, who led the study effort for Norwalk, CT market research firm International Resource Development Inc., is predicting that by 1990 singles bars around the world will be equipped with computerized card readers to assist their customers to meet "compatible" companions. According to Moes, customers will carry special cards — the same size as today's credit cards but holding far more data — and the terminal/readers in the bars will read this data into a small computer in the bar. The computer will compare such attributes as age, height, interest in sports, interest in music, interest in travel, etc. and indicate to the customer who else in the bar might have compatible interests. The cards will give a whole new meaning to the term "personal" computer, says Moes.

First, Medical Cards

Even before the dating card comes into widespread use, its cousin the medical history card will have become established in the US, according to the IRD report. The report details several trials of such cards, of which the most ambitious is probably that by Blue Cross/Blue Shield Health Insurance. That organisation announced last year that it had given Canon a contract for about $40 million to produce some 60,000 reader/writer terminals over a five-year period. The terminals will be used to inscribe detailed medical histories on optical cards, which patients will carry around with them.

One objective of this program is to reduce fraud in claims processing, but an important objective is also to make sure that medical histories on, for example, a heart-attack victim can be made immediately available to the hospital treating him. Virtually all doctors and hospitals will be equipped with terminals, and thus will be able to read the Lifecard™.

According to the IRD report Kuwait and several other nations are actively investigating the use of the same technology to produce tamper-proof identity cards and passports for their entire citizenry. "One optimistic vendor hopes to sell 600 million optical cards to the People Republic of China," reports Moes.

Nicer Neighbours On The Airplane?

Moes envisions airplane companies using the "dating card", or something similar, to assign airplane seats to travellers. "With any luck, you'll always get to sit beside somebody interesting," says Moes, who explains that the airline will be able to computer-match customers on the basis of their interest in particular hobbies, etc. "The airline companies are going to regard this as a bit of a nuisance, but once one airline offers it they all will, just like with in-flight movies," predict Moes, who plans to make sure his dating card specifies that he sit next to "gorgeous blondes —preferably wealthy".

IBM Hovering On The Fringe

The IRD researchers expect IBM to "imminently" move towards major participation in the optical card and/or microchip card markets, possibly in concert with Intel and Malco. According to the IRD report, the IBM microelectronics manufacturing facility at Burlington (VT) is said to have requested presentations by vendors of components and technologies relating to the robotic assembly of microcircuit cards. For example, Smart Card Systems has been grilled about its parent's TAB manufacturing process. (IBM claims that it is interested in IMI's TAB process only.)

Many of the technologies associated with "smart" cards were developed by French companies, strongly encouraged by the French government who have benefited from the more than 2 million terminals in the French Minitel vidiotex which were given away free and can interface with "smart" cards. However, the IRD researchers see the French as soon being "left in the dust" by their Japanese competitors. In the optical card market the US gained an early lead, with Drexler Technologies claiming patent coverage on "just about the whole idea" of optical cards. But Moes sees several Japanese vendors as "simply ignoring" the Drexler patents, while others have signed license agreements with Drexler.

For further details on the $2,300 report (#696) Optical & "Smart" Cards. **Contact: International Resource Development Inc., 6 Prowitt Street, Norwalk, CT 06855 USA; Telephone (203) 866-7800.**

EASY MUSIC

Commodore 64 Music Part 3

Ian Waugh shows you how to lick SID's Envelopes

With a few rudiments of music under our collective belt (June) and a map on the table that we might navigate our way around SID (September), let's put some of the theory into practice.

SID has all the basic facilities of a 'proper' synthesiser and one of the most fascinating programming exercises we can do is to see how close we can get to natural musical instrument sounds. It requires careful selection of the waveform, filter settings and — of prime importance — correct ADSR attributes.

The ADSR (Attack, Decay, Sustain, Release) or Envelope Generator determines the way in which the volume of a note varies during its production. Using just these four phases it is possible to duplicate the envelope of most instruments quite accurately.

The ADSR Envelope

The attack phase is the length of time required for the sound to reach a certain, usually maximum, volume. String instruments have a slow attack phase which might be around a tength of a second. Percussion instruments such as the piano, drums and plucked string instruments like the guitar, have a fast attack phase and their sound reaches maximum volume almost immediately.

The decay phase occurs immediately after the attack phase and is the length of time taken for the volume to reach a second, usually lower, level — the sustain level. The sound usually decays or drops in volume during this phase hence its name. Instrumental sounds generally need at least a few hundredths of a second to dampen down. This helps to explain why a backwards recording of an instrument sounds so strange — it dies away too rapidly. In fact it doesn't die away, it's cut off. This is easily duplicated by electronic means and the envelope generator makes it easy to produce on the 64.

After the decay phase, the sound enters the sustain phase. As its name implies, the volume is sustained at a constant level. Because the sustain phase is not a measurement of time and the attack, decay and release phases are, it sometimes causes confusion.

When the sound has gone through all the above phases it reaches the release phase. On the 64, we can not set the release phase to allow the note to continue indefinitely. We can only do this by not gating the note off, so allowing it to continue at the sustain level. The vibraphone and many percussion instruments have long release times and fade away slowly. String instruments don't take quite so long but you can still hear the note hanging there a little before it dies away.

The release phase, in fact, is what many people would refer to as the decay of a note. ADSR is just a convenient way of subdividing the volume or amplitude envelope of a sound into manageable sections. It is unlikely that confusion will arise over terminology as the meaning will usually be clear from the context.

Programming the ADSR Parameters

Each voice has two registers which contain its ADSR characteristics. For voice 1 these are registers 5 and 6 (see

CONTINUED ON PAGE 48

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map in September issue). Each parameter is controlled by four bits which means their values will range from 0 to 15.

The problem with POKEing register 5 with say, 185, is that we can not immediately see what values the separate attack and decay bits hold. It is far easier to talk of an attack rate of 7 than to try to remember that this means adding 112 to the POKE value. We can do this by getting the computer to work out the POKE values — calculations are, after all, their strong point. For example:

```
10 AT=7:DE=5:SU=12:RE=9
20 POKE S+5,AT*16+DE:POKE
   S+6,SU*16+RE
```

An added advantage of this method is that we can reassign any of the ADSR variables within the program and make a call to, in the above example, line 20 to change the envelope parameters.

ADSR Rates

The ADSR rates are listed in the diagram [Figure 6.3]. You need a good ear to tell the difference between some of the faster times.

The rates refer to the amount of time taken to complete one phase or cycle. For example, with an attack rate of 11 the sound would take .8 of a second to rise to maximum volume.

The ADSR Generator Program

As you can't see sound directly, a good way to explore sound envelopes is to be able to hear the sound and see a graphic representation of it as it plays. This program allows you to alter the ADSR parameters and see and hear the resulting envelope.

Program Notes

Here's a brief commentry on the program so you'll know how it works. It will also help if you want to make alterations and modifications to it.

It programs first GOSUBs to 2450 where it initialises the variables. Lines 2540 to 2570 read in the attack, decay and release rates from the data in lines 2680 and 2700. Line 2550 reads past the first set of data, the tune data, in line 1400. S is set to the first SID register (see September's map) in line 2590. The ADSR and duration parameters are set next. The routine at 1900 POKEs the ADSR parameters to S+5 and S+6 as described above.

After the initialising routine, the program proceeds to the screen display which is self-explanatory. Line 1140 makes a call to the graph-drawing routine at line 2050. The first three lines draw the axes and then we proceed to the line calculations.

VALUE	ATTACK RATE	DECAY AND RELEASE RATE	SUSTAIN LEVEL
0	.002	.006	0%
1	.008	.024	7%
2	.016	.048	13%
3	.024	.072	20%
4	.038	.114	27%
5	.056	.168	33%
6	.068	.204	40%
7	.08	.24	47%
8	.1	.3	53%
9	.25	.75	60%
10	.5	1.5	67%
11	.8	2.4	73%
12	1	3	80%
13	3	9	87%
14	5	15	93%
15	8	24	100%

Figure 6.3: ADSR Rates.
The attack, decay and release rates are in seconds. The sustain level is a percentage of the overall volume.

ADSR Graph Generator

```
1000 REM PROGRAM 6.1
1010 REM ADSR GRAPH GENERATOR
1020 :
1030 GOSUB 2450:REM INITIALISE
1040 :
1050 PRINT"[CLR]";
1060 PRINTTAB(11)"A D S R   GENERATOR[CD
]"
1070 PRINT" [RVS]A[RVO]TTACK  ="AT;TAB(1
5)"[RVS]D[RVO]ECAY   ="DE;TAB(29)"S+5 ="
S5
1080 PRINT" [RVS]S[RVO]USTAIN ="SU;TAB(1
5)"[RVS]R[RVO]ELEASE ="RE;TAB(29)"S+6 ="
S6
1090 PRINT"[CD] [RVS]G[RVO]ATE DUR="GD;T
AB(15)"[RVS]W[RVO]AVEFORM  "W$(WA);
1100 IF WA<>3 THEN PRINT:GOTO 1120:REM N
OT PULSE
1110 PRINT" -"DC;"[CL]%"
1120 PRINT" [RVS]T[RVO]UNE                [RVS
]N[RVO]OTE"
1130 :
1140 GOSUB 2050:REM DRAW GRAPH
1150 :
1160 GET CO$:IF CO$="" GOTO 1160
1170 IF CO$="W" THEN GOSUB 1530
1180 IF CO$="T" THEN GOSUB 1270:GOTO 116
0
1190 IF CO$="N" THEN GOSUB 1440:GOTO 116
0
1200 IF CO$="A" OR CO$="D" OR CO$="S" OR
 CO$="R" OR CO$="G" THEN GOSUB 1790
1210 IF CO$="Q" GOTO 1240
1220 GOTO 1050
```

Drawing Lines

Drawing graphs in high resolution mode from BASIC takes a long time. In this program we want to see the effect of new parameters immediately and the only other method of quick printing to the screen (other than using machine code) is to use normal text mode. This gives us a resolution of some 40 x 25. As the ADSR values only range from 0 to 15 this is quite adequate although two concessions have had to be made.

Any time less than half a second is allocated .25 of a second on the graph (any time less than this would be little more than a straight line anyway). Secondly, as you will find, the program cannot print an envelope with a total time of more than .25 x 40 seconds. This is far longer than would ever be required for an instrument sound although long envelopes are fun to experiment with. It's not much of an inconvenience. The advantages in being able to see an overall picture of the envelope — quickly — far outweigh any disadvantages.

As the 64 has no DRAW command to enable us to connect two points, we must perform our own calculations. If we have two lines at points X1, Y1 and X2, Y2 we can use the following:

```
G=(Y2-Y1)/(X2-X1)
```

to find G, the gradient of the line. Then we can use

```
C=Y1-G*X1
```

to produce a constant by which we can increment the Y axis. We draw the line with this:

```
FOR X=X1 TO X2: Y=G*X+C:GOSUB
  Drawing Routine: NEXT
```

Each run through the loop will give us the X and Y coordinates of the next point to be plotted. Graph axes usually start their coordinates from the bottom left of the screen so the point 15, 11 would be 15 units along the bottom (moving from left to right) and 11 units up.

The 'PRINT AT' Routine

After calculating the X and Y coordinates we need a means of getting to that point on the screen. We normally site text by including cursor commands in the print statement. This is fine if we know where we're going. If we try to use cursor commands in this way within the loop which calculates our X and Y coordinates we would get in a terrible tangle.

As you can see, the PRINT AT routine is very simple, X and Y must be defined before calling and it simply prints the required number of SPCs across the cursor downs.

The Sustain parameter

Rather than attempt to draw a sustain time proportional to the note duration, the sustain period has been fixed and is drawn as three dashes at line 2260. This enables us to fit longer envelopes onto the screen.

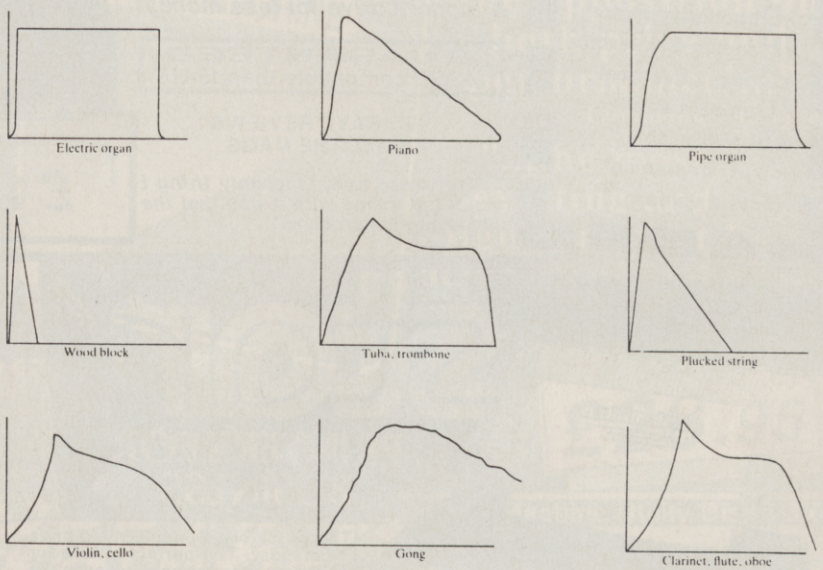
As soon as the envelope is gated off the release phase will begin regardless of whether or not the other phases have ran their course. This will only occur if the note duration is shorter than the overall time of the envelope. You will hear the results although you will not see the effect on the graph.

you will be asked to input the duty cycle as a percentage (ie. a value between 0 and 100). The 12-bit number and the high and low bytes necessary to produce this wave will be printed should you want to make a note of them. At this point, press any key to continue.

Press Q to quit.

The program keeps a constant update of the ADSR graph on the screen. If you press N for NOTE, the current envelope will sound. T for TUNE will play a short tune. G (for GATE) allows you to alter the duration of the notes in the tune.

The best way to discover how the ADSR envelope works is to experiment



Sample Envelopes.

The Tune

Line 1270 plays the tune. The notes are read as 16-bit numbers from line 1400, split into high and low bytes and POKEd into the pitch registers. The duration of the notes is controlled by line 1340 which makes use of the internal clock which increments by 1 every 1/60th of a second. The tune enables you to hear what effect the envelope has on several notes played consecutively. If the tune becomes boring after a while (which it will), you can easily alter the data.

Using the program

The Y (vertical) axis has 16 points, one for each volume setting. The X (horizontal) axis is scaled in .25 of a second units. Pressing A, D, S or R allows you to alter that parameter. Input the new value and press RETURN and the new envelope will be displayed. When the graph is drawn, the attack, decay and release times will appear on the screen at a point near to the completion of their phase.

The waveform can be changed by pressing W. If you select the pulse wave

with the program. If you wish, you could modify the routine to print a sustain period which takes account of the note duration. You could also add a scaling feature so that envelopes over .25 x 40 seconds would fit the screen. It is possible to produce an envelope lasting 56 seconds with a zero sustain period although it would probably be monotonous to listen to. The program will draw most envelopes that you are likely to use for musical purposes.

Instrument Characteristics

The ADSR generator coupled with our control over waveforms (including filtering) can duplicate many instruments quite convincingly. In doing so, there are one or two points to bear in mind. The envelope has as great an influence upon how we perceive a sound as the waveform so construct your envelopes with care. The pitch will also affect our perception. The same sequence of notes may sound like a piano in the middle octaves and piccolo higher up.

CONTINUED ON PAGE 53

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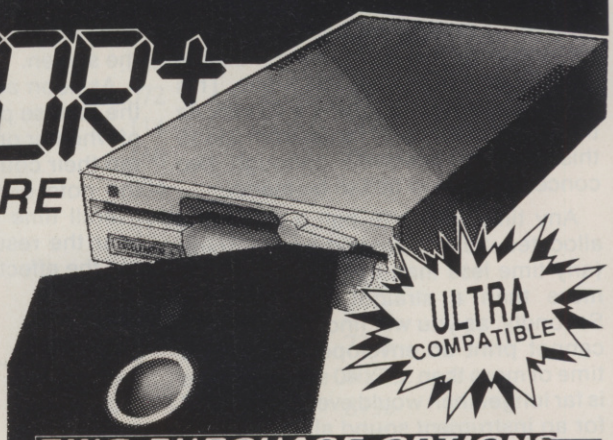

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Violin	4 to 6	slow	medium/slow	portamento, vibrato, scales
Viola	3 to 5	slow	medium/slow	
Cello	2 to 4	slow	medium/slow	
Bass Guitar	2 to 4	fast	slow	rhythmic figures
Trumpet	4 to 6	fast	medium/fast	vibrato
Trombone	2 to 4	medium/fast	medium/fast	portamento
Tuba	1 to 3	slow	medium/fast	use for staccato bass line
Alto Saxophone	3 to 5	medium/fast	medium/fast	slides up to note
Tenor Saxophone	2 to 4	medium/fast	medium/fast	bends note
Flute	4 to 6	medium/fast	medium/fast	trills, arpeggios
Clarinet	3 to 5	medium/fast	medium/fast	slow vibrato
Oboe	4 to 6	medium/slow	medium/fast	
Bassoon	2 to 4	fast	medium/fast	slow, mournful
Guitar	2 to 5	fast	slow	bend the note
Accordion	2 to 6	medium/slow	medium/fast	slightly out of tune
Harp	1 to 7	fast	slow	arpeggios, glissando
Xylophone	4 to 7	fast	medium/fast	glissando
Snare drum	medium	fast	medium	drum rolls
Bass drum	low	fast	medium	short beats
Organ	0 to 7	fast	fast	vibrato, full chords

Figure 6.5: Characteristics of some Common Instruments.

INSTRUMENT/EFFECT	WAVEFORM	A	D	S	R
Piano	Triangle	0	12	0	8
Harpsichord	Sawtooth/Pulse 22%	0	11	0	7
Flute	Triangle	9	6	12	7
Xylophone	Triangle	0	8/9	0	8/9
Clarinet	Pulse 50%	6	5	12	5
Oboe	Pulse 3%	6	5	12	5
Violin/Strings	Sawtooth	9	8	12	7
Pipe Organ	Triangle/Sawtooth	6	0	15	1
Electric organ	Triangle	2	0	15	0
Backwards	Any	12/13	0	0	0

Figure 6.6: ADSR Figures for some Common Instruments.

For greatest realism, the notes played should be similar to the ones a real instrument would play. For example a tube would rarely play more than four notes in a bar, one on each beat — or even just two, one on the first and one on the third beat. Strings often sustain a note over several bars and they are also used to play fast scale and arpeggio passages.

To help you with further experiments, the diagram [Figure 6.5] describes the characteristics of some common instruments. Remember that one man's clarinet is another man's oboe so do program sounds which *you* like.

The envelope shapes are described in terms of attack and decay. In this context, the decay refers to the release phase. [Figure 6.6] contains some of my interpretations to start you off.

Don't forget, too, that you can create an enormous range of completely new sounds. This is one of the most interesting and creative aspects of music making made possible by the versatility of the SID chip.

Next time we'll see how the filter can be used to give us even more control over the waveforms.

Ian Waugh

A Layman's Burst Mode Guide

by M. Garamszeghy

The 1571 disk drive is proving its popularity all over the world. Yet most people fail to use all its remarkable capability. Often the Burst Mode seems mysterious and somewhat daunting. Mike Garamszeghy is a Canadian expert on many aspects of things Commodore. He has written a four part series that will explain how to master this interesting and useful mode.

Part 1: Command Summary

The 1517 disk drive is one of the most versatile mass storage devices available for Commodore computers. Its disk operating system (DOS) supports an extended set of commands that allows the drive to, among other things, create, read and write disks in a wide variety of formats with relative ease. The description of these commands — collectively called 'burst mode' — in the 1571 instruction manual, is at best cryptic and, in most cases, downright confusing. This article is part one in a series designed to demystify this extremely powerful and useful set of commands. In this month's article, I will present a brief description of the syntax and function of each of the burst mode commands. In future instalments, I shall examine the operation and structure of the high-speed data transfer (burst) protocol used by many of the burst mode commands.

Many, but not all, of the burst mode commands have analogous commands in standard Commodore DOS. Why then is there a need to duplicate them in burst mode? The answer is speed. The data transfew rate of a 1541 drive (or a 1571 in 1541 mode) is about 350 bytes per second. The 1571 in fast mode is about 1200 bytes per second. With burst mode, data can be read or written at the blistering rate of up to 3800 bytes per second! In addition, burst mode allows you to access disks formatted in the non-Commodore industry standard, MFM (maximum (or modified) frequency modulation) format as well as Commodore GCR (group coded recording) format.

Burst mode commands are accessed by sending a specific set of characters through the disk command channel, in a manner similar to the usual Commodore DOS commands such as **n0:, s0:, b-p:.** The first two characters of all burst mode commands are **u0.** This allows burst mode to be accessed by a BASIC statement beginning with **open 15, 8, 15, "u0".** What comes next depends on the desired function and its options. The first additional character selects the function and, perhaps. one or two primary options. The remaining characters select secondary options.

Before data can be read from, or written to, a disk using burst mode, it is necessary to log *in* the disk. After logging in, data can be read or written at will. If you remove the disk or change it, or even re-insert the same one, you will have to re-log the disk. The disk can be logged in by one of several methods. The simplest is to use the *inquire disk* command. This command will return a single status byte containing data on the current disk format and error status. If more detailed information is required about the format of the disk (such as number of sectors per track, sector numbering system, et cetera), then the *query disk format* command should be used. This latter command can be used to analyse the format of a specific track on the disk, while *inquire disk* only looks at the first track on the disk.

Fast Load

Data can be read from the disk by one of two methods. The first method is the *fast load* command. Unlike the other burst mode commands, *fast load acts* on an entire file and will only work on flies stored in normal Commodore DOS GCR format. The routine will work with either PRG or SEQ type files. For consistent performance, the DOS wild card character should be appended to the filename being read (For some quirky reason, *fast load* will not always recognize a legitimate filename unless it ends with a ★.) The second method, *read specific sector,* is similar to the Commodore DOS **Block-Read** command. This command will work with either GCR or MFM disks. Unlike the DOS **Block-Read,** the burst mode command can be used to read more than one sector at a time. The order in which multiple sectors are read can be changed using the *set sector interleave* command. (Note that this is *not* the same as the sector interleave subcommand of the *utility* command.)

The default interleave of 1 corresponds to contiguous sectors. That is, if you started at track 10, sector 1 and read 3 sectors, you would read sector 1, then 2, then 3. If you changed the interleave to 3, you would read sector 1, then 4, then 7. Commmodore DOS has, in most cases, an interleave of 10. C-128 CP/M has an interleave of 5, while most MFM disks do not use software interleaves. If you have ever traced a file through its various tracks and sectors using the 1541 **Display Track & Sector** program, you will see that in a file occupying consecutively allocated sectors, the sector numbers jump by 10 each time. (An exception is the directory file, which has an interleave of 3.) Similarly, if you note the disk status display in the lower right corner of the CP/M screen display, the sector indicator jumps in increments of 5 each time a new sector is accessed. Multiple sector block-reads do not appear to be very useful unless you know that the data you want to read occupies consecutive sectors. One application of this function would be in a high speed disk copier, where a large number of sectors are read and then written to the corresponding locations on a new disk. The number of bytes transfer red per sector read is equal to the number of bytes per sector, plus one. Therefore, 129, 257, 513 or 1025 bytes will transferred, depending on the sector size. The first byte is a status byte, followed by the data bytes.

Analogous to the *read* command is the burst mode *write specific sector* command. This allows you to write one or more sectors to a specific location on a GCR or an MFM disk. This command, however, is slightly more complicated than the read command because both burst data input and output are required. The calling program sends one sector of data, then waits for the drive to return a status byte. If more than one sector is to be transferred in sequence, then the next sector can only be sent once the status byte from the preceding sector has been read from the burst data channel.

The 1571 drive is capable of formatting disks in a variety of different types. Burst mode GCR formatting does not create a disk directory or BAM sectors. Its usefulness lies in the creation of custom disk formats with unique directory sectors and BAM (or functionally equivalent indexes). It can also be used as a high speed formatter for a disk copying program.

DOS Parameters

The final set of commands allow you to change various DOS parameters. These are not really burst mode commands but, since they are included in the burst mode chapter in the 1571 manual, a brief description is in order. The sector interleave sets the increment

by which disk sectors are filled during normal DOSI/O. This parameter does not affect the way a file appears to the user because sectors in a given file are linked automatically when the file is accessed.

The *ROM signature analysis* command is basically a ROM self test. If the ROM test fails, the green busy-light will flash four times.

The mode select is used to select either 1541 (single-sided, slow speed) or 1571 (double-sided, slow or fast speed) mode. Either mode can be accessed by any Commodore mahcine but only the C-128 can use the fast serial data transfer. For example, you can use the 1571 as a double-sided drive on a VIC-20 or C-64. The selected mode remains in effect until either the drive is reset (hard or soft method) or a new mode command is issued. The *side select* command is an interesting feature. With single-sided disks, the data are usually stored on side 0. By selecting side 1 with a single-sided disk (i.e. 1541 mode), you can format it, read it, or write to it, thus creating a pseudo double-sided disk. This is similar to a flippy (the process of turning a disk over to use the second side on a single-sided drive), except that the flip is electronic rather than mechanical. It should be noted that the flip side of a flippy *cannot* be read using this method because the direction of disk rotation changes for a mechanically flipped disk but not for an electronically flipped disk.

The final utility command is the *device number change.* This is identical to the 1541 command and is self explanatory.

Many of the commands will return a value called the 'status byte'. A bit by bit description of this byte is provided in the 1571 disk drive manual. In general, the low order 4 bits represent the status of the disk controller. A decimal value of 0 or 1 for these four bits indicates that everything is fine. Any other value indicates a controller error as listed in the 1571 manual. The high order 4 bits are used for MFM disks. If these bits are set then the disk is MFM format. The bits represent the number of bytes per sector. The status can be checked at any time using the *inquire status* command.

Table 1 is a summary of each of the burst mode commands along with the byte sequence required to access it. All byte values are in decimal. If these commands are sent using a BASIC command string in an **open** or **print** statement, the sequence should be sent as **"u0"** + chr$(a) + chr$(b) + chr$(c)... where **a, b** and **c** are the byte values listed in the table. Similarly, for machine language calls, the listed byte values should be preceomd by the values 85, 48 (decimal) or 55, 30 (hex). It should be noted that error checking is not performed on any of the parameters before they are passed to the 1571. This must be done by the calling program before the bytes are sent. Where no burst data input or output are requested, the function can be called entirely from BASIC.

Some of the command bytes have been simplified by selecting the most frequently used options. Other options may be available for some of the commands. A detailed bit by bit description of each command string can be found in the 1571 manual.

The burst transfer protocol is really quite simple. However, it cannot be used with a simple **GET, INPUT,** or **PRINT** statement from within BASIC. Data are transferred directly to and from the data registers of the serial bus controller (CIA 1). The process is entirely under user control (i.e. fully manual) and in all cases is handled on a byte-by-byte basis. □

TABLE 1: Burst mode command summary

FUNCTION	BYTE SEQUENCE "u0"+chr$( )	BURST INPUT	BURST OUTPUT
READ A SPECIFIC SECTOR:			
MFM disk side 0 or GCR disk (either side)	64,track#,sector#, # of sectors (usually 1)	(none)	for each sector read: one status byte then data bytes
MFM disk side 1	80,track#,sector#, # of sectors	(same as above)	
WRITE A SPECIFIC SECTOR:			
MFM disk side 0 or GCR disk (either side)	66,track#,sector#, # of sectors	data bytes	one status byte after each sector transferred
MFM disk side 1	82,track#,sector#, # of sectors	(same as above)	
INQUIRE DISK: reset drive and log in MFM or GCR disk before a read or write			
MFM disk side 0 o GCR disk	4	(none)	one status byte
MFM disk side 1	20	(same as above)	
FORMAT DIS:			
MFM single sided	70,129,0,sector size (0=128 bytes/sector, 1=256, 2=512 or 3=1024), last track# (default 39), # of sectors per track, starting track# (default 0), track offset (default 0), fill byte (default hex e5)	(none)	(none)

CONTINUED...

CONTINUED FROM PAGE 55

MFM double sided	first byte=102 then rest same as above		
GCR disk double sided no directory or BAM	6,0,ID byte#1, ID byte#2	(none)	(none)

SET SECTOR INTERLEAVE: (for multi sector read and write)

Set interleave	8,interleave	(none)	(none)
Read last setting	136	(none)	last setting

QUERY DISK FORMAT: analyze disk format (GCR or MFM-sector

Side 0, track 0	10	(none)	size,sectors/track) one status byte then: nothing else if GCR disk or un-readable format or else: another status byte, number of sectors on track, logical track#, min sector#, max sec.# hard sector interleave
Side 1, track 0	26	(same as above)	
Side 0, track n	138,n	(same as above)	
Side 1, track n	154,n	(same as above)	

INQUIRE STATUS: check drive status or load status register

Log in disk with new status	76,new status	(none)	(none)
Check last status	140	(none)	status from last I/O
Check if disk was logged	204	(none)	old status if logged or status error code 13

SET UTILITIES:

Sector interleave	62,83,value	(none)	(none)
#Retries on errors	62,82,value	(none)	(none)
ROM signature analysis	62,84	(none)	drive LED blinks 4 time if analysis fails
Mode select	62,77,mode (mode = 48 for 1541 mode or 49 for 1571 mode)	(none)	(none)
Side select	62,72,head (head = 48 for side 0 or 49 for side 1)	(none)	(none)
Device # change	62,dev# (dev# = 4 to 30, normally 8 to 11)	(none)	(none)

FASTLOAD: read an entire GCR file

SEQ file	159,filename character bytes...+"*"	(none)	for each sector read: one status byte then 254 data bytes last sector: status byte=31, net byte= number of bytes left, then rest of data byte

CBM
Back in the Big League

One and a quarter million pounds. £1,250,000. This is a lot of money however you spell it. It is more money that any football club in the United Kingdom has ever received at one go for a sponsorship. Or for a "Partnership" as Chelsea Football Club, the fortunate receivers of this agreeable sum so tactfully call it. For that kind of cash "Partnership" is by no means too much to ask. However what Commodore want by putting up that £1.25 million is not so much being an equal with a not to highly successful first division English league soccer team but publicity, preferably on TV and plenty of it. They want Chelsea to bring the Commodore name before the largest possible number of potential buyers of their computers and their peripherals. They want the public at large in the UK and abroad — lots of other countries see British football games on TV — to become aware that Commodore has overcome the worst of its troubles and is back again in the big league of computer companies. For the the achievement of that aim would be worth every penny of that million and a quarter.

Of course, officially, CBM never has been out of the big league. Okay, so it made a worldwide loss of over $120 million. So it had to cut its staff — also worldwide by around half. So Jack Tramiel, its leading light in the great days went off and restarted Atari. So its most recent executive boss Tom Rattigan, the apparent architect of its painful recovery, got himself into a power battle with Irving Gould, the man who owns a large chunk of Commodore shares and really controls the company, and was not too gently escorted out of CBM's US headquarters and is now involved in legal actions with Commodore for millions of dollars. So Commodore UK has had five or six bosses and three different places of residence in the last three years . . . Well, ask Commodore at any time during that interesting saga of problems and they would have told you that everything was going fine, Oh yes there have been a few little local difficulties but it was all over now — until the next crisis, of course . . .

Football Sponsors

Now the biggest influence in Commodore is West Germany — which controls the UK and incidentally also sponsors a football team — the successful Bayern Munich. They know the value of getting your name before the general public on the shirts of sporting heroes. So since Commodore UK's new boss took over just a few weeks ago, Steve Franklin (sounds like the name of a star footballer too, doesn't it?) has had *his* team searching for a sponsorship that would achieve that magic public awareness that could carry with it the recognition that could help overcome the bad publicity that CBM has had in the recent past.

It was Chelsea — one of the very few big names left without sponsorship that provided the opportunity. When the sponsorship was announced at Chelsea's Stamford Bridge Stadium, Franklin — and Chelsea's controversial chairman Ken Bates — both looked delighted. For although Chelsea's reputation might be a little dirtied by the same problem that afflicts English football everywhere — hooliganism — for both organisations the "partnership" will bring substantial benefits. Chelsea will get not just the £1.25 million for a three year sponsorship but also extra payment — like £100,000 — for winning the Cup or high places in the League. For Commodore there is the enormous advantage of TV exposure and the putting of its name before thousands of people every Saturday.

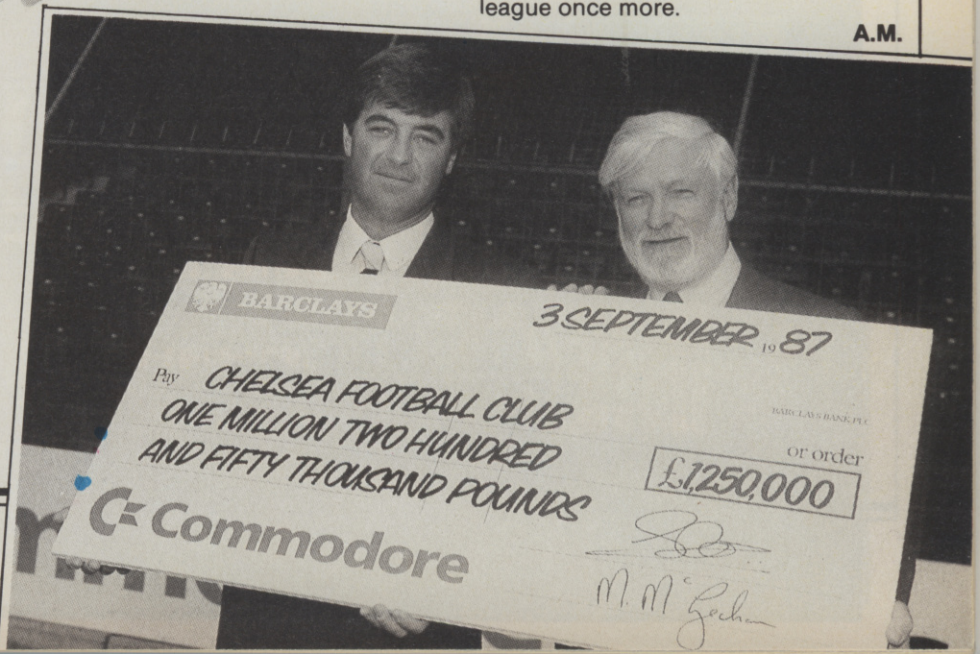
Amiga

Will it affect the average Commodore owner or potential buyer? Yes. If you are already a Commodore owner the re-emergence of CBM into a secure financial situation means that you and your machine are assured a continued support not just from Commodore but from other companies who supply software and add-ons. They won't get involved with companies whose machines may not be around too long. Why should they? But if they are sure that a company's computers are here to stay then they see a good future in producing things for them. And that means things that you can use and enjoy. For potential buyers — and this particularly applies to machines like the Amiga — they certainly want to know that it's not going to be here today and Who was it? tomorrow.

So CBM's financial health is of concern to all of us — not least the Commodore magazines (sighs of relief from CCI). Their improvement has given them the chance to spend some money last yer they did not even have. It is not just a question of hype, though that plays a part in all public presentation. It is also a matter of being able to afford better support services, more research and development and when it comes down to it selling more machines because if more computers are sold then the things that go with them will be bought in greater quantities and *their* prices will go down — another benefit to all Commodore owners, present and future.

So Commodore's sponsorship for Chelsea is a good sign. It is a symbol of CBM's return as a strong and reliable company. And whether Chelsea win the First Division Championship or not, it is an indication that the name that is on more computers than any other brand that in homes all round the world is back again — competing in the really big league once more.

A.M.



Feature

US GOLD

On December 17th 1986, everybody connected with US Gold breathed a deep sigh of relief. Ian Stewart's Gremlin Graphics — of which US Gold's boss Geoff Brown is a director — had been given the responsibility of programming what was slated to be the biggest computer game at Christmas the top selling period of the year. In spite of the problems usual in creating a long-awaited home computer release from a number one coin-op game, Gremlin came up with the goods. The big carboard boxes stood open in the cavernous warehouse of Centresoft — the UK's largest entertainment software distribution organization, yet another wing of the high flying US Gold empire. They were packed as fast as the game arrived from the duplicator and rushed out to dealers and shops around the UK and abroad. The 17th of December left it late but not too late to get the game rocketing to the number one spot and sell more than any other. That smash hit game was, of course, the now legendary Gauntlet. "And it stayed in the charts for 36 weeks" Geoff Brown told CCI with a touch of merited pride.

Later US Gold came out with a follow-up Gauntlet, The Deeper Dungeons with new challenges set by fans who sent them in by the hundred, which also raked in the cash.

What better than for US Gold to look towards Christmas 1987 with another game that could blast its way to equal outstanding success — none other than Gauntlet II. Programmed by the same expert team of Gremlin Graphics, it will be heading for a top chart position simply on the basis of the reputation of its predecessor — a reputation which US Gold swears won't be let down. Interestingly, it won't be left to the late date Gauntlet I hit the shops. The sequel is promised to be out by the beginning of November and so should give plenty of time for it to score with hundreds of thousands of eager Gauntleteers. Why should US Gold not make Gauntlet II its immediate pre-Christmas heavyweight release? The real blockbuster that hits number one at one jump! Because big though it is, they have another megastar game that they think will be even more colossal. Bigger than Gauntlet II? Yes, but more of that later.

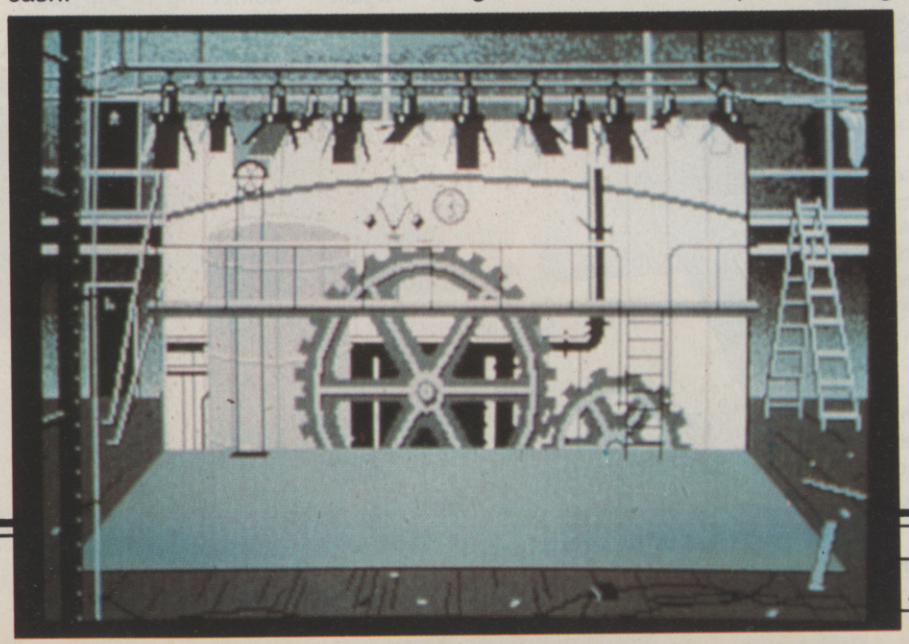
"You wonder why the ...CHARLIE CHAPLIN

US Gold had this and last year another game that outstayed even Gauntlet in the charts — Leaderboard. For 43 weeks, this excellent golf sim, has held its place among the UK top sellers — and it's still there joined by its follow-up World Class Leaderboard, which must be some kind of a record — two of the same game in the charts at the same time!

Rygar

However, the major games coming from US Gold don't end there — not by a long way. Even before Gauntlet II slaps us in the face, 'Gold' will release two games that may well vie with each other for the number one position in the charts and the favoured spot on your home screens. "Rygar" — Geoff Brown says flatly "will be a hit". It has that magic success formula for home computer games — outrageous violence. "It will get rid of *all* your aggression", He points out with a certain grim satisfaction. Rygar is a famed coin-op but roughly at the same time, US Gold, will cash in on one of the biggest ever film tie-ins —Indiana Jones, which is also a amous coin-op smash, and has universal 'character recognition', what Brown calls 'multifaceted product'. From the preview we saw of it, there seems a real big hit potential about the danger-loving Indiana (Harrison Ford) Jones, whip and all, because that's what he uses to quell his enemies, leaping off chasms and scaling cliffs, as per the movie.

Just to make up the tremendous weight of its autumn releases is Infiltrator II. It's really two bits in one. If you, like thousands of others have got Infiltrator I, then you can upgrade for £4.99 If you haven't (where have you been for the last 18 months?) You can buy the whole I & II for £9.99. Chris Gray, the original Infiltrator programmer, has done



the enhancement which speaks for itself.

In spite of all this glitzy new stuff, CCI's own choice for really top value US Gold product is not really new at all. It is a compilation that is, in our view, the best ever, better even than 'They Sold a Million' which was the first real big grouping to score in multiple thousands. Called justifiably 'Sold Gold', it cannot fail to impress even the most hardened game players. Just listen to this for a line-up, Ace of Aces, Infiltrator, Winter Games, Leaderboard and, yes indeedy, 36 weeks in the chart — Gauntlet I. 'Solid Gold' certainly lives up to its name and sells for only £9.99! Do not walk — run or skateboard to your nearest friendly computer store when Solid Gold arrives. With your hot little hand clutching a tenner. Name us any *6* budget £1.99's to equal it for value. And don't lend it to anybody, ever, you'll never get it back!

Most Famous

However, US Gold — and Geoff Brown — didn't get rich by resting even on well-earned laurels. And some soul-searching went on early this year to create a range of home entertainment software that had something to make it stand out from the crowd. "We looked around and said 'what can we do that's not been done before?' We wanted to be different" says Brown.

Well how did 'Gold' manage it? They looked for the biggest names of the most famous people they could find. Who are they? Well, who would you say are the most instantly recognisable faces in the world? Well, US Gold came up with three stand-outs. And they went out and bought these unequalled star names. Not the people — they're all dead anway — but the use of their names, faces and personalities in any way 'Gold' wants them. Could you name better choices than US Gold made in Charlie Chaplin, Marilyn Monroe and James Dean? The last incidentally, still sells more posters for bedroom walls than anyone else in the world — which can't do a computer game using this character a lot of harm can it?

What has US Gold paid for these megastars? They don't reveal how much but you can bet it would buy a lot of the diamonds that Marilyn used to sing were a girl's best friend — or the Ferraris and Porsches that grace the US Gold car park.

The first US Gold 'production' of these three is Charlie Chaplin. No, it won't, Brown says be the obvious and easy idea of a platform game with Charlie flying up and thumping down on banana-skins. For a start, that wouldn't sell in the US where a name like Chaplin will make something really good into a long selling and huge cash maker. Instead, US Gold went to Canvas, a well-reputed programming house in Liverpool and got them to create an 'entertainment product'.

You are Charlie and you are making a film as a director. You have to edit the film, choosing your props. When you've made the film, of course you have to take it to an audience, in this case the computer, which rates it. If you get good ratings you make money and can make more films. If you don't, you lose your cash and your game. Canvas, by the way, did the recent success Roadrunner, topping the all formats charts as number as CCI goes to press, so it looks sure to be a high class piece of work.

Not even US Gold know yet what they're going to do with Marilyn M. and Jimmy Dean. 'We might ask CCI readers for ideas and give them a percentage' So far the first time ever, US Gold is offering to let you, the reader, in on the ground floor of a big business proposition. If you've got the ideas — don't send them to us but to US Gold!

CONTINUED...

"Another companies bother..."

...RYGAR

INFILTRATOR...

SEVEN NEW MIND BLOWING SIMULATIONS FROM

STRATEGIC SIMULATIONS INC

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As pilot you control the mission flight on a bombing raid from your home base in Italy; as group leader you command 40 B – 24's on bomb runs to 14 targets deciding on when and where to bomb depending upon weather, plan availability, group efficiency and target oil production levels. A flight and combat simulation of unparalleled quality.

CBM 64/128 Cassette £14.99
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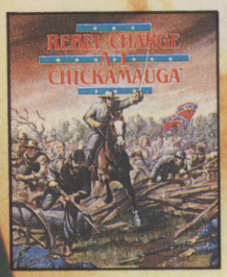
B – 24
"The most realistic flight simulation you're ever likely to experience"



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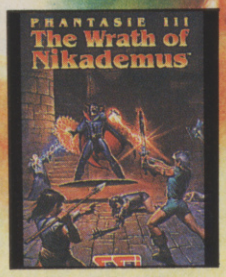
APPLE, ATARI, CBM 64 £24.99 Disk £29.99 IBM



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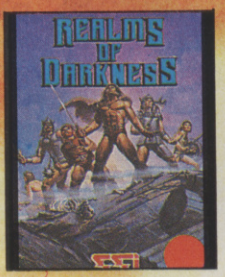

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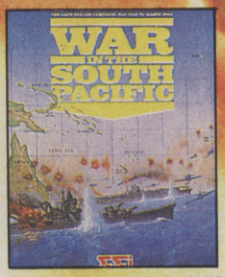

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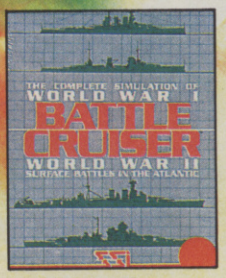

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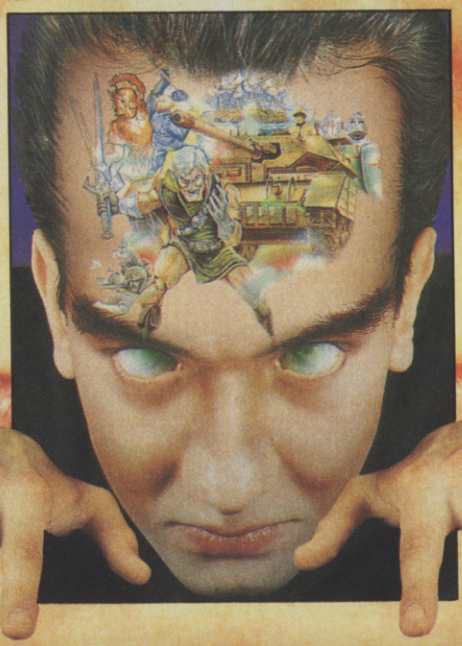

U.S. Gold Ltd.,
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Birmingham B6 7AX.
Telephone: 021 356 3388
Telex: 337268

STRATEGIC SIMULATIONS

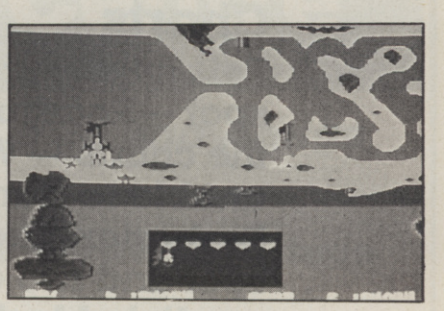
US GOLD

... CONTINUED

720°

Another arcade conversion Geoff Brown mentioned as a 1987 release didn't impress us as it apparently ought to have done. We'd heard of 720° as an arcade game but it had somehow escaped us. But when we came back and told Nick, the office skateboard freak, he totally flipped. "720°! RAD, Man!" It turned out that even the raddest, gnarliest skaters got off their boards for this one in the arcades around the world. Geoff Brown pointed out that 720° was typical of the innovative approach 'Gold' was taking, for with the game will be a free audio cassette "You put it on your sterea and you get the real machine music. We're working on a flexi-disk too". They are going to loop the music on the 64 to make it sound good but even that won't compare with the audio of the coin-op music lasting 10 minutes that you'll get when you buy 720° for your 64.

Okay, Okay, we hear your impatient screams. What is the US Gold megamegastar that is going to explode over the Christmas games-world like a super-nova? Well, every wise man-in-the-know, games reviewer with any street cred at all (Yes, Toy Horgan, you knew it didn't you?) will tell you what's going to be number on on December 25. The name is — of course — Outrun. "The biggest coin-op in the world" says Geoff Brown modestly — and with that 'Yes, I sincerely want to be rich' gleam in his eye tells you "It is the biggest dollar earner in the arcades since . . . Gauntlet! . . . It will have 25 levels, a special end sequence where they get their rewards . . . It's been done on a custom designed two meg chip . . . It will be very very high quality . . . No-one's done anything like it before . . . The Commodore version is the most difficult to do . . . The number of sprites . . . It's being developed by not one but two program houses — Amazing and Probe . . ." Brown sits back, even his sophistication seemingly stunned to silence by the enormous impact that he imagines Outrun will create.



...ROAD RUNNER

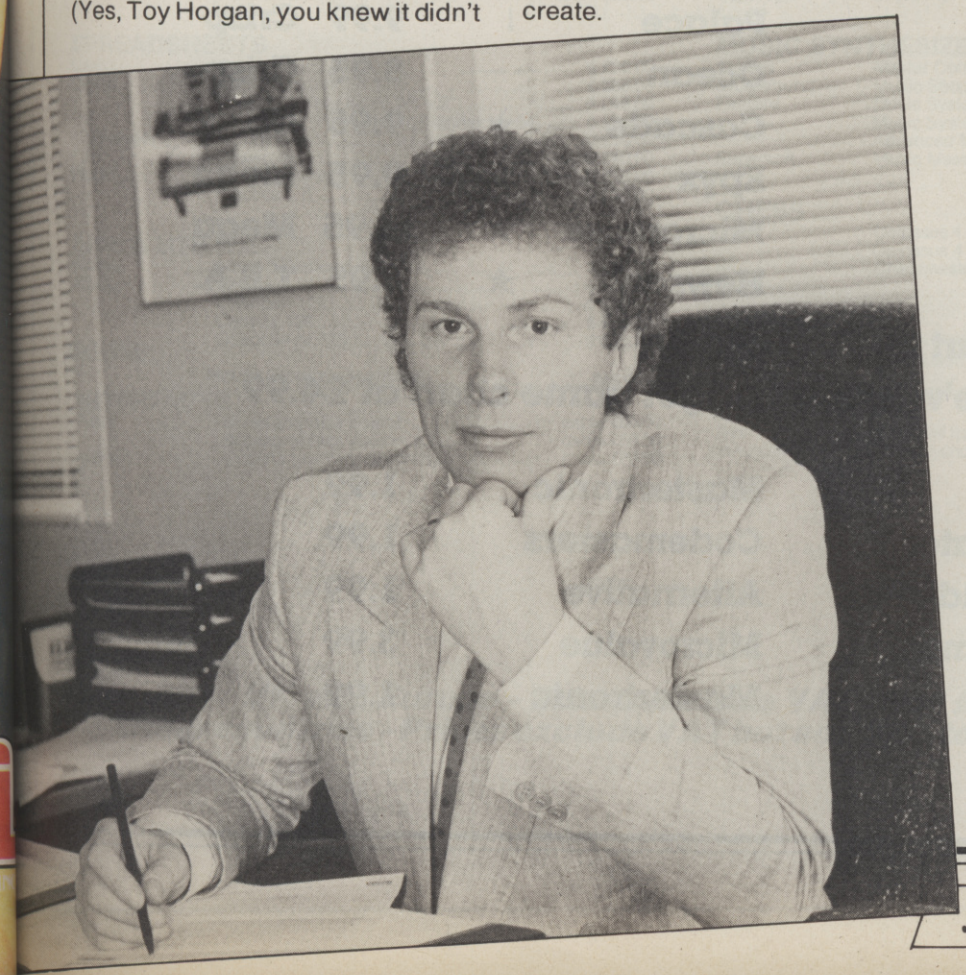
He talks his way through the list of these US Gold releases and adds in the forthcoming Epyx games that his company also handles —the awesome California Games, Street Sports Basketball, Impossible Mission II and Sub Battle Simulator — "Silent Service with action" he calls it. A look of anticipatory satisfaction comes over him; as if he'd just seen the name Outrun in neon lights at number one all over the world; and he says quietly "It just can't fail. You wonder why the other companies bother . . . If I was another company I'd throw in the Gauntlet . . ."

Freudian Error

It's an interesting Freudian error — a very natural one. He probably meant 'throw in the towel' for it is US Gold that has thrown down the gauntlet, challenging the whole worldwide games industry to match its obviously market-leading globally popular products.

It isn't just a question of the money they're going to make. Geoff Brown still gets a buzz out of it all. "We really want to be number one at Christmas . . . It's fascinating to sit here and decide what people are going to buy . . . but I never think about leading the market . . . the exciting thing . . . is that you can lead and the others follow . . . We really take a risk but you've got to say 'I'm not frightened' . . ."

Most people would say that with the massive Outrun and with the Solid Gold compilation and its other 1987 big guns coming out in quick succession to bombard the charts, Geoff Brown and US Gold have very very little to be frightened about. It is the other games companies, when they consider what they have to face, that will find picking up US Gold's challenging gauntlet a fearsome even shattering experience.



... GEOFF BROWN

Charts

This month a new game hits the coveted Number One spot —Roadrunner displaces US Gold's last month top of the charts — World Class Leaderboard. Last Ninja unable to stand the pace slips down a place as does Barbarian. Brand new release Ace 2 leaps to seventh spot and two other entries are the big Epyx Epics (as we predicted last month). Exolon, Hewson's latest shoot 'em up sneaks in at number 10. Next month watch out for California Games likely to challenge straight away and Mega Apocalypse.

We introduced a new Budget Special Chart. But don't expect to see any but pretty familiar names — the budget titles just keep on selling month after month. Milk Race at Number One has been around a long time but BMX Simulator came out last year!

C64

GAME TITLE	COMPANY	Price(£)	Rating
1 Road Runner	US Gold	↑ 9.99	Mega
2 World Class Leaderboard	US Gold	↓ 9.95	Mega
3 Last Ninja	System 3	↓ 9.95	Awesome
4 Wizball	Ocean	↑ 8.95	Mega
5 Barbarian	Palace	↓ 9.99	Crisp
6 Game Over	Ocean	→← 8.95	Crisp
7 Ace 2	Cascade	★ 9.95	Crisp
8 Epyx Epics	Epyx	★ 9.95	Mega
9 Pirates	Microprose	★ 14.95	Mega
10 Exolon	Hewson	★ 8.95	T.B.A.

Budget Chart

This month we've got a budget game chart at £4.99 and under.

1 Milk Race	Mastertronic	1.99
2 BMX Simulator	Codemasters	1.99
3 Run For Gold	Alternative	1.99
4 4 Great Games	Microvalue	3.99
5 Kickstart 2	Mastertronic	1.99

The 64 Software Centre

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THE U.S. GOLD CHALLENGE!

NAME THE NUMBER ONES!

U.S. GOLD Boss Geoff Brown claims in the U.S. Gold feature in this CCI that his company is going to wipe the floor with other games houses. He thinks that he has such a load of powerful games coming out over the next few months that U.S. Gold is going to clean up all the Number One spots from now till forever. Well at least till 1988. Do you hotshot games players out there agree? Or do you think you know something that he doesn't?

Well, the games that he thinks will hit you like a ton of bricks are Rygar, Gauntlet II, Indiana Jones, Solid Gold — (a great compilation and CCI's favourite) and of course, the fabulous OUTRUN.

U.S. Gold has challenged you to name the highest position that those five games will reach in CCI's monthly chart. What you have to do is send us your prediction of how high you think each will go. If you think, for example, they will all reach Number 1, just write that on a postcard with the number 1 beside each name. If you think each one will get to number 2 except OUTRUN which will hit the top spot, write that. That's all you have to do! Not much really! Come on, beat the U.S. Gold challenge!

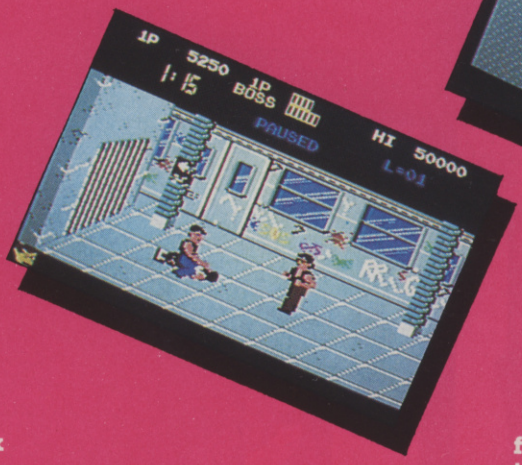
The winners — the first twenty out of the Comp Sack — will receive an exclusive U.S. Gold sweatshirt and one of the first twenty OUTRUNS to leave U.S. Gold.

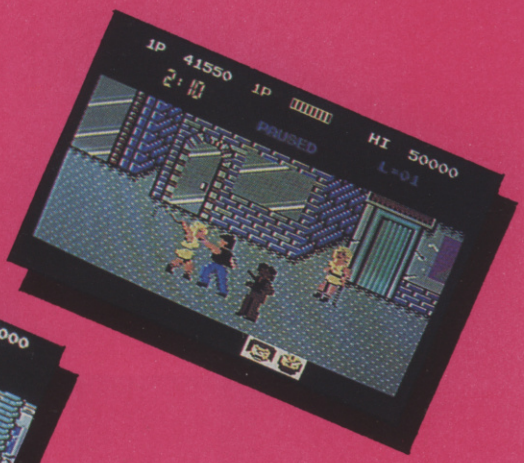
The very first winner out of the Comp Sack will also get a free year's subscription and a chance to review a U.S. Gold game for CCI — because he, or she, is bound to be a pretty smart character and we'd like to get to know a winner as bright as that!

Because of the kind of competition this is, we've got to make this an early closing date. So answers on a postcard please to CCI/U.S. GOLD Charts Competition, 40 Bowling Green Lane, London EC1R 0NE by November 15th.

C64

CRISP





Renegade — Imagine

Just recently, mainly parents and social worker types have been complaining about the amount of violence in computer games. Think back to Space Invaders. What happened in that game? Loads of aliens got zapped by a spaceship. Now think of all the karate games, and games like Barbarian with its beheading sequence. What's the difference? Humans are on the receiving end instead of aliens. For some reason this is thought to be more violent and tastless than alien bashing. Renegade is no-doubt going to provoke even more social worker type complaints, but who listens to them anyway?

In Renegade, the phantom girlfriend-kidnapper has struck again, so off you go to rescue her. As we all know, the phantom girlfriend-kidnapper has many faithful minions who do their best to stop you achieving your goal. In this case, you're a streetwise New Yorker with a nose cracking punch and a rib busting kick.

The game is played through five levels of weapon-wielding gangs. The whole gang must be defeated on each level, including the oh so butch leader, to progress to the next. Each level is about two screens wide and scrolls with the action. On the first level, some opponents are unarmed, but some have pipes with which to pulverise your head. Five moves are available to the player and are accessed by pressing the ' ', '1' and '2' keys on the keyboard. The joystick is used to walk about, and the button has no function. Using joystick and keyboard simultaneously makes the game awkward to play.

The moves available are punch, kick, flying kick, kneeing, and punching a man when he's down (definitely not cricket!). The instructions leave a little to be desired, and do not say how to do this. I found out that it's done by standing over a floored opponent, pulling down on the joystick, and repeatedly pressing the appropriate attack key. When all the gang has been defeated, the boss comes out. he or she takes a lot of punishment before going down for the count.

The game starts off in the subway, and moves on to a pier where you encounter mad bikes as well as the gang. After the pier, you get to the downtown streets where a gang of the meanest 'ladies' hang out. To go with the pipe wielders are some kinky tarts with whips! Beat them allup and out comes BIG Bertha. Believe me, she is big! There's no time to think as this great creature charges and rams you with her 60 inch bust! In the unlikely event that you defeat her, you come across a gang of thugs with razor blades. One slice and you're a gonna here. Complete this stage and you find the boss of the last gang armed with a gun. Wow Man! Dodge those bullets and get in close to put an end to the phantom's plan. At last the girl is yours.

Renegade isn't impressive to look at. The sprites are animated OK, but their design is simple. The backgrounds on the other hand are good, with a fair amount of detail.

Soundwise, the game varies from excellent loading music, to weak effects and in-game music.

Renegade does have some bugs, for example, the way some opponents can walk off ledges without falling, and the high score doesn't register properly when playing the game.

These aside, Renegade is good fun to play, but can be very hard at times.

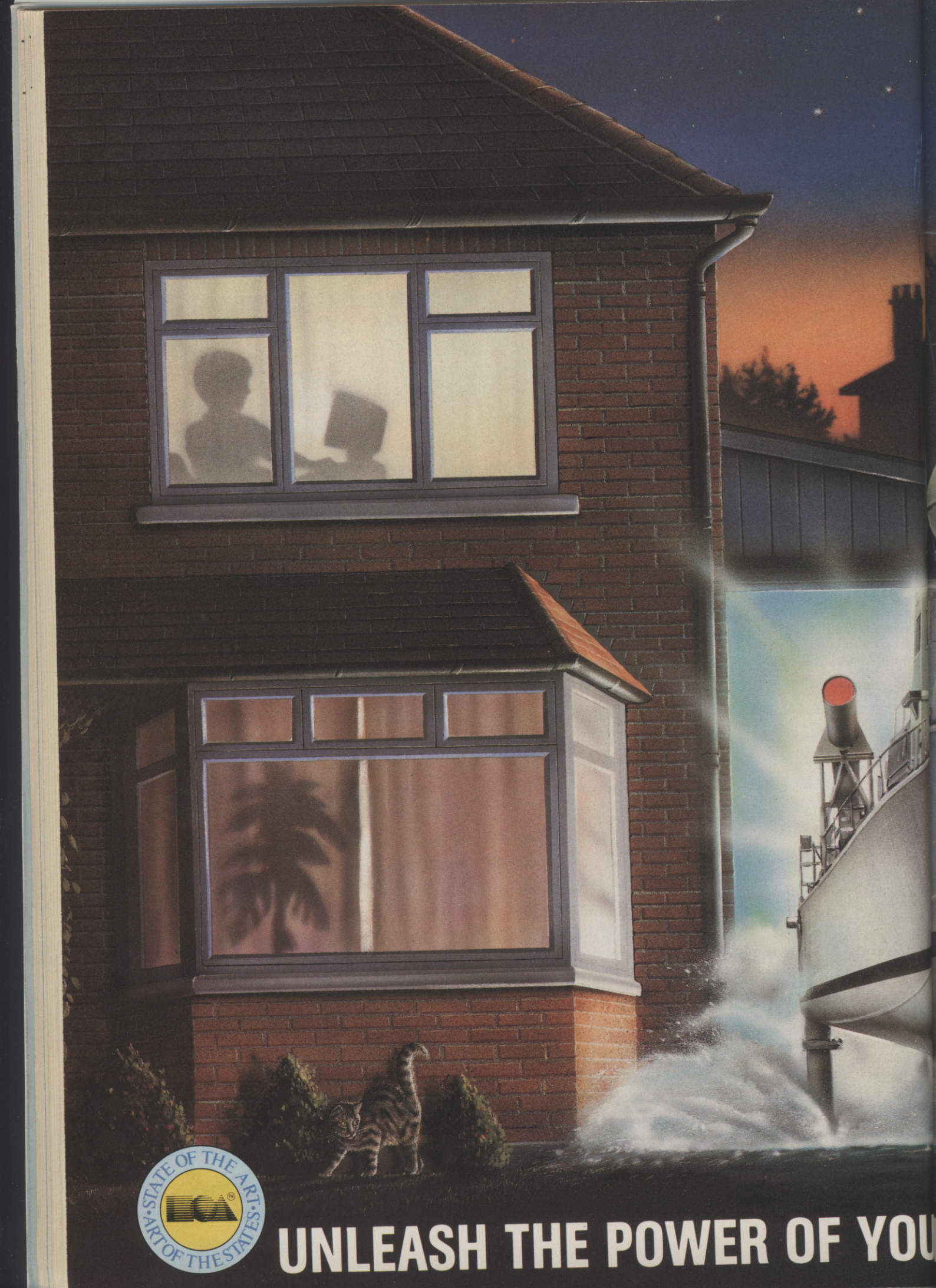
To help you out, I'll give you a few hints for success. The main problem is when two fighters gang up on you, one in front and one behind. Walk to the far end of the area, preferably one without a ledge, and fight standing against the wall. On the second level, using this technique, continually punching the boss will result in you getting a roundhouse kick to the head. To avoid this, wait until he starts to get up before punching him. Finally, the only way Big Bertha can be knocked down is by running towards her, then turning back to get some distance between you and her, and giving her a flying kick as she runs at you.

I hope these are of some help to Renegaders everywhere. If you would like to see a regular playing tips section in the magazine write to us with your tips, maps and pokes, and we'll see what can be done. It's up to you.

Getting back to Renegade, I must admit to being just a bit disappointed. It's not particularly professional or innovative, but will please fans of the arcade game who aren't expecting too much. Get out there and punch it to them before they punch it to us!

T.H.

Price: £9.95 (c) £14.95 (d)
Graphics: ★★★
Sound: ★★★★
Playability: ★★★★
Rating: Crisp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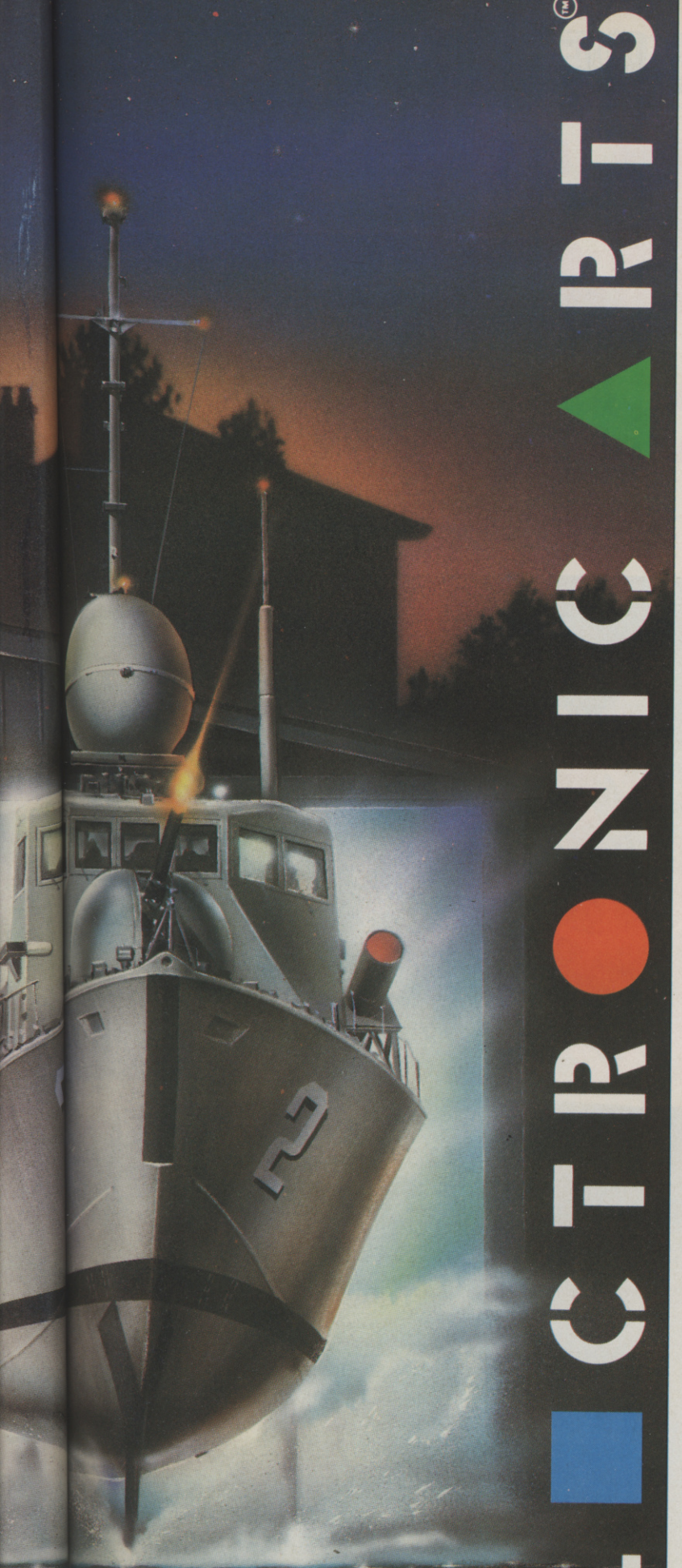

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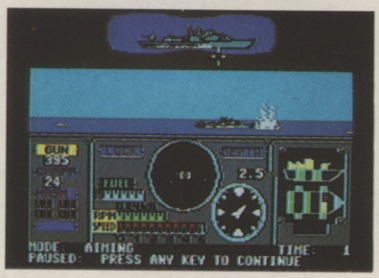

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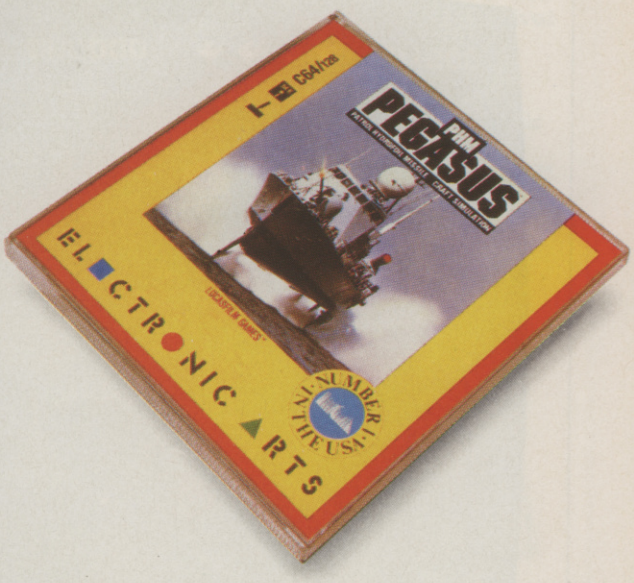

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MEGA AP

"This is bound to take its place as leader of the pack!"

Mega Apocalypse — Martech

Simon Nicol has done it again in his follow up to the classic game, Crazy Comets. You can tell this game is good as soon as you start playing it, even the screen shots somehow manage to capture the feel of it, and get you in the mood for what you know is going to be an excellent blast.

On the inlay it says "Congratulations! you are now the proud owner of the most mega advanced super shoot 'em up game ever for your Commodore 64/128" and I'm totally in agreement with this statement, it is, simply the best shoot 'em up I've played, and I think everyone in the office is in agreement.

The storyline takes the mick out of itself every step of the way and even advises you to skip the paragraph if the game has already loaded.

You have been selected to explore the universe, to boldly go where no man has gone before, boldly seek out strange and exciting new life forms, and then blast the living daylights out of them!!! You start off in a remarkably fast and powerful spaceship and suddenly a large comet comes hurtling towards you — you blast it... now what?... Well if you look you'll be able to see that coming towards at mega speed is a star that if you pick up will give you mega firepower, Oh Wow!!! This is crazy man — since when have there been stars which give extra powers to spaceships? But what's this, extra speed now, it's getting weirder!

Missiles also play a large part in this game and their one aim in life is to blast you to kingdom come.

POCALYPSE

"Simply the best shoot 'em up I've played!"

Simon Nicol said this game is what he wanted Crazy Comets to be, and it is — if Uridium was thought of as a classic shoot 'em up then this is bound to take its place as leader of the pack. I like it even more than Wizball and that is my — was my — all time favourite game. The frantic activity of the game as you try to collect extra weapons an shoot things before they get you makes it incredibly addictive, and the music is a nice fast urgent piece by the mega maestro Rob Hubbard.

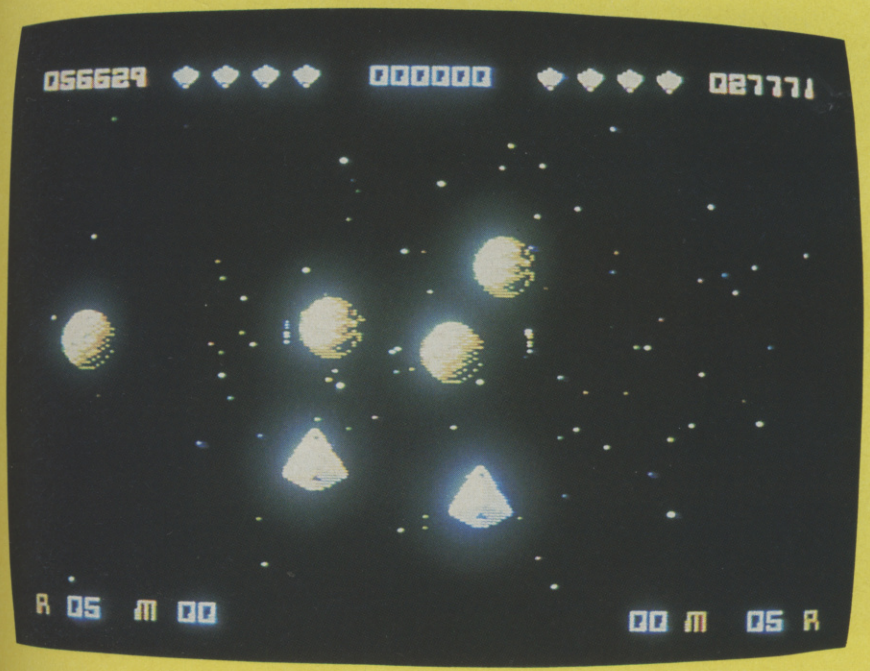
Now then I mustn't forget to mention the fab sampled speech as you play — no hissing, or interference is experienced as it is played either and that in itself is an accomplishment, but with the graphics, gameplay and music it is extraordinary.

There are several different types of modes of playing the first being one player, the second, two players, the next option is playing together as allies and the last being a game where you can try to beat your opponent playing as enemies!

This is an excellent game that will live up to everyone's expectations and entrance new players. Now then Braybrook where's your new one?

Courtney exits, mumbling something about getting to the next round, and not being able to wait for "Andy's new one."

C.K.



Mega Apocalypse

When I and a couple of friends were invited to the play-testing of Mega Apocalypse I was rather sceptical with regards to all the hype the game was getting.

We got downto business. Brilliant! Five channel sound, digitised speech and sound effects, but where's the game? Playing it seemed nothing special, and dare I say it, a mite boring.

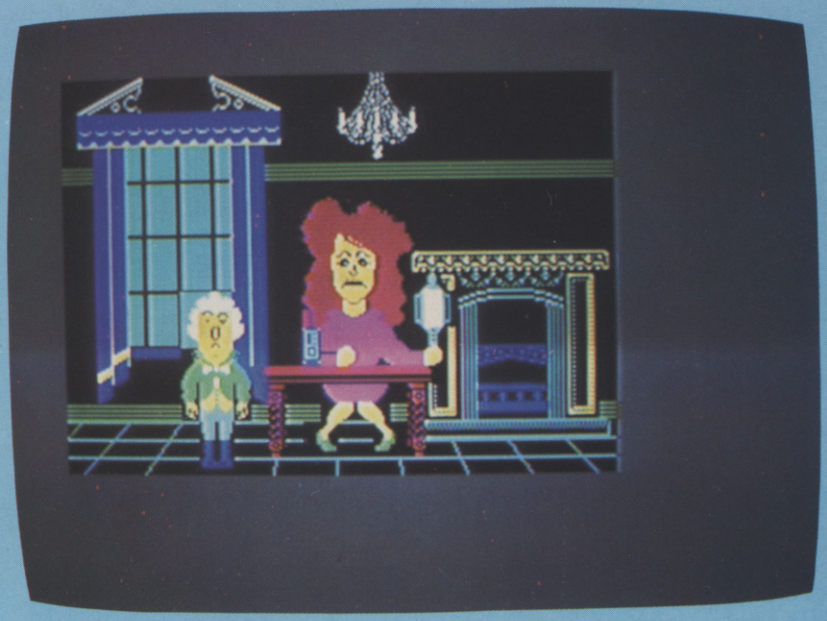
Since then I have seen the error of my ways which just shows that even with joystick smashers like Martech's that might seem simple you've got to give them the chance to show you what they're worth. Although very similar to Crazy Comets, Mega Apocalypse is great fun to play. I don't think I had time to get into the game at the play-testing, but now realise what a terrific blast it is. I have to say that personally there are still one or two other shoot 'em ups that I think rival Mega Apocalypse for sheer dazzling blow your mind pyrotechnics on any home computer, but Mega Apocalypse is amazingly good fun to play.

T.H.

Price: £9.95 (c) £14.95 (d)
Graphics: ★★★★
Sound: ★★★★★
Playability: ★★★★★
Rating: Awesome

MEGAREVIEW

CRISP



Flunky — Piranha

What is a flunky? I wondered to myself when I heard about this game. Coming from the author of Trapdoor, I was expecting a character along the same lines, the name sounding rather like a cute little something or other. The fact is that Flunky is neither cute, blue, or cuddly, but the game is still in the same style as Don Priestly's other games.

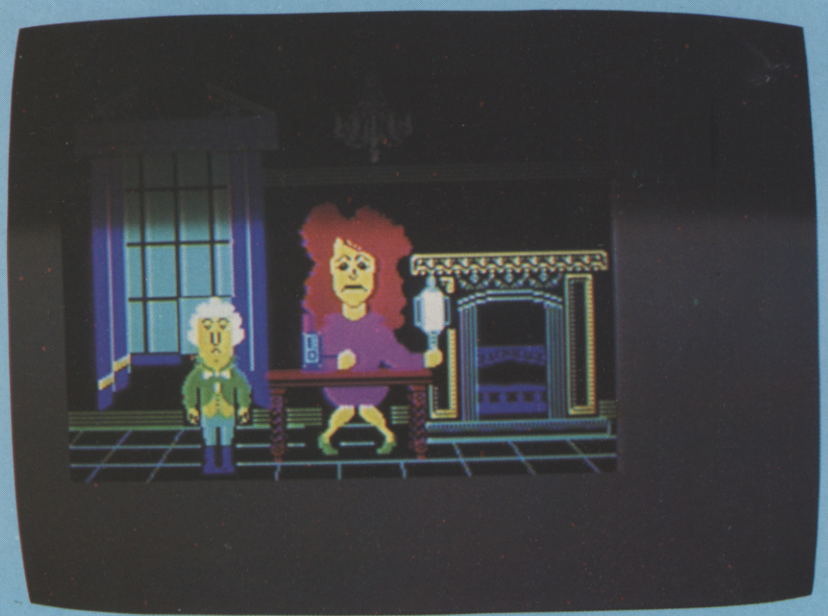
You take the part of Flunky, faithful dogs-body to the royal family. The object of the game is to collect an autograph from each member of the family. Unfortunately, autographs are hard to come by, and a request from each personage must be carried out, however wierd it may seem. Andy wants a boat to play with in the bath, Fergie is devoid of any freckles, Charlie wants some polo balls, Di has lost her wig, and the Queen wants her corgies.

During the game, all the backgrounds and characters are displayed in hi-res mode. The characters are large and colourful, but move in character blocks to avoid nasty Spectrum style colour clashes. If you have seen or played Trap Door, you will know what to expect. On the whole, most of the screen is filled by the current location, but some rooms only use as little as a quarter of the screen.

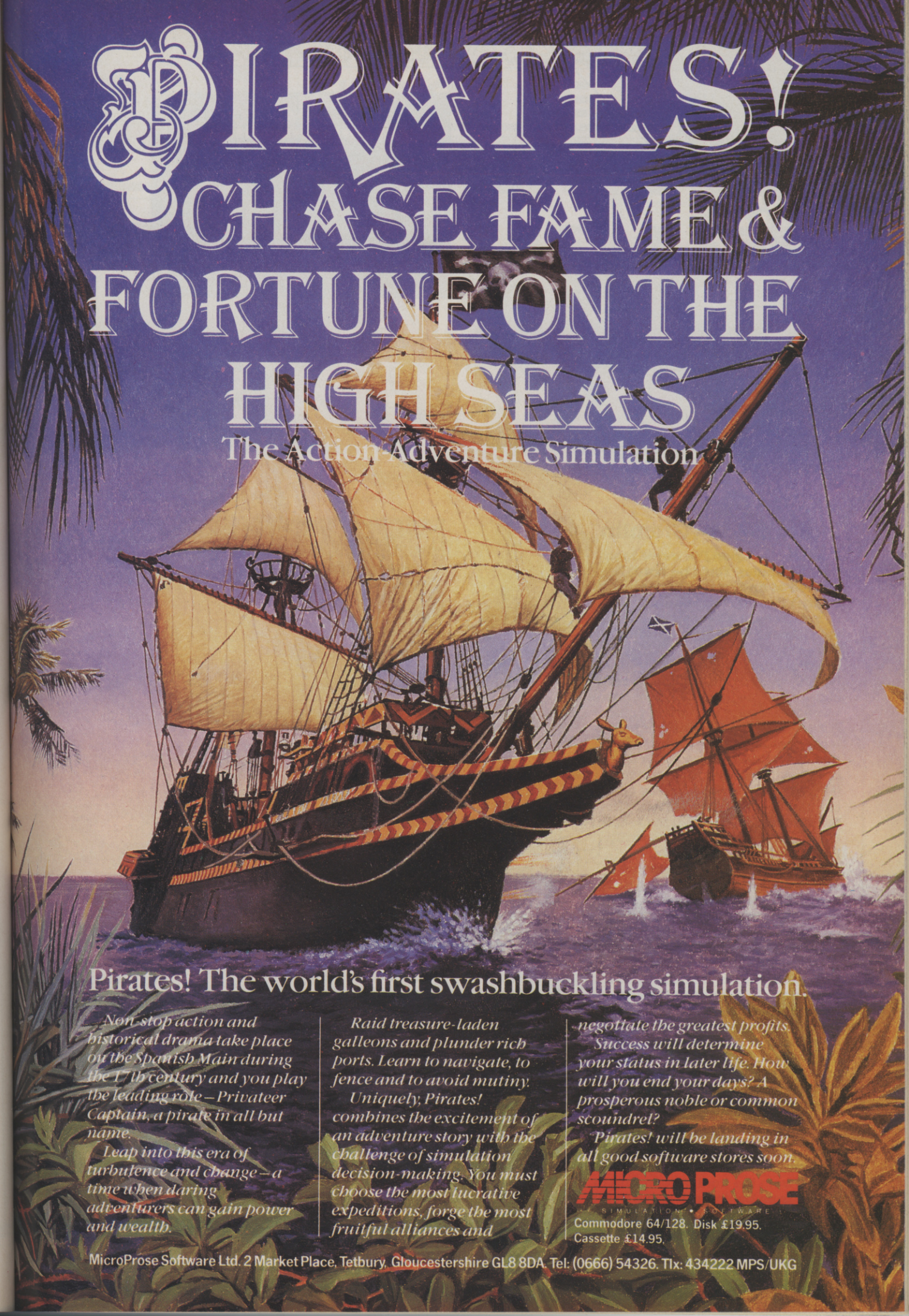
The problems posed in Flunky are more tricky than Trap Door, perhaps a little too hard, although this will prolong the length of interest time, assuming you don't give u in frustration. (We'll try and get a tip for you for next month just in case!)

The graphics are big and colourful, but I must say I preferred the graphics in Trap Door. The slow joystick response annoyed me a little. Sound effects in the game are basic whistles and white noise ffffff's.

Flunky is not intended to be an exciting arcade-style game. It is designed, and very cleverly, to keep you coming back to its almost annoyingly magnetic tricks. Flunky might seem, to someone who doesn't think much, rather slow, and a mite uneventful, but if Trap Door or Popeye were some of your favourite games, Flunky will please you a great deal. Nice graphics and a game that will keep Don Priestley's reputation shining.



Graphics: ★★★★
Sound: ★★
Playability: ★★★
Rating: CRISP.
Price: £9.95 (cass)
£14.95 (disk)



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C64

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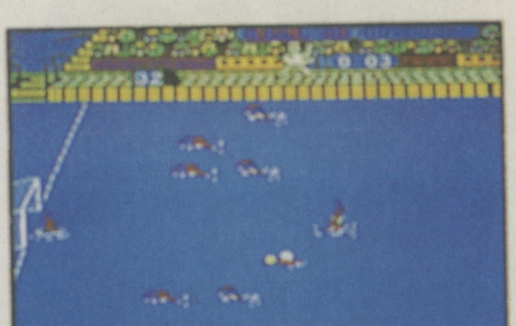


water polo

Water Polo — Gremlin

Now here's a sport I've never seen on a computer. You'd be hard pushed to find an action sport that doesn't have a computer based on it, but Gremlin have managed it with Water Polo, which certainly shows originality.

Water Polo kicks off with a number of options, the player can choose between demo mode, one or two players, and a championship.

The game starts with the teams in a neat formation swimming to the ball. A well-time press of the fire button will earn you possession of the ball. The viewpoint is the same as most football games, being from the side and above with the length of the pitch scrolling horizontally. During a match you control the player nearest the ball. This isn't always true, because as long as the player is moving, control stays with that player to avoid sudden confusing changes.

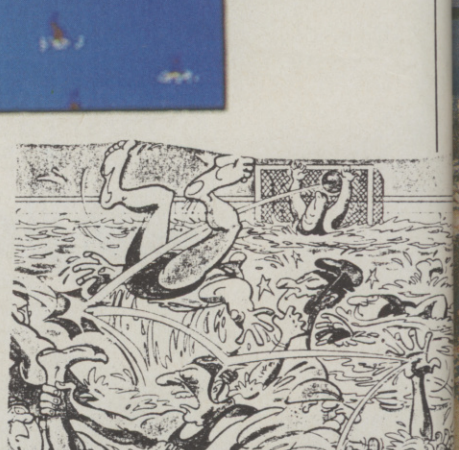
In two player mode, the second player controls the opposing team. Up to four players can join in with a team each in the championship mode.

The players are controlled by swimming in eight directions with the joystick. To throw the ball, a rather complicated combination of joystick positions and button presses make it possible to throw hard fast and low, perform a delicate chip, and swerve the ball. The ball can be taken from an opponent simply by swimming up to him from the front. Attempting to tackle from behind will result in the referee throwing a wobbly on the side of the pool, and a frenzied blow of his whistle. If one player fouls three times he is sent to the sin bin for a minute and a half or until the opposition scores.

Graphically, Water Polo is respectable. The sprites are small but well drawn, the screen scrolls smoothly, and an excitable crowd bob up and down more than the ball. The sound effects are few and far between, but a nice touch is the way the crowd sound gets louder and more excited as the action hots up.

At first Water Polo can be very hard, but perseverance pays off when you slam in your first 20 yarder. Although nothing outstanding, Water Polo is a highly enjoyable game, and it must be praised for being a novel idea that is a welcome change from the same old games we get so often.

T.H.



Price: £9.99 (c) £14.99 (d)
Graphics: ★★★
Sound: ★★
Playability: ★★★★
Rating: Crisp

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C64

CRISP

Ace 2 — Cascade

There have been flight simulations on home computers for just about as long as I can remember. One of my first games as a ZX81 owner was Sinclair's Flight Simulation. As this tiny machine could only manage four by four pixel resolution as best, it wasn't that surprising that you felt like you were watching a screen of small squares that jumped about now and then, more than flying a plane. Thankfully, the standard of flight sims has moved on since then, with colour and hi-res graphics.

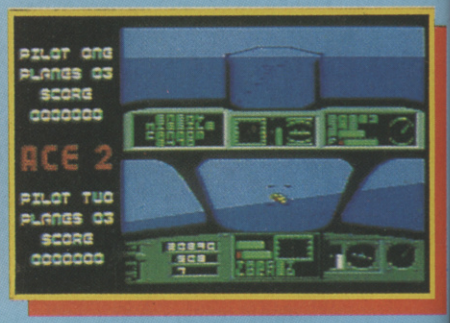
Ace 2 is the latest flight sim to be released on the 64. You've probably guessed that it's the sequel to the highly acclaimed Ace. Ace 1 was a tremendous and deserved success. It brought a reasonably demanding level of flight simulation into a gameplaying environment. It was — for a long time — a first class piece of entertaining and challenging software. Ace 2 has eliminated a number of the controls which needed constant attention and so gives more of a game than sim feeling to it. The main difference however between Ace 2 and its forerunner, is the simultaneous two player option (almost a compulsory requirement for any game these days), and very well it works too.

There are two missions over desert and sea area to choose from. The first is a straight forward air to air dogfight. In this mode, the two players are armed with a cannon, heat seeking missiles, and radar guided missiles. Before take-off each player can alter the amounts of each weapon, but an increase in one will result in a decrease in another. Selecting take off with start the game. There is no take off sequence; each plane starts in the air. Using the map and radar, the players must find each other and attempt to shoot each other down. Repeated hits with the cannon, or fewer hits with missiles will destroy the aircraft. The amount of hits the planes can take can be set before the game. Each player has a set amount of planes, the number of which can also be altered. The game is over when one player loses all his planes.

The second mission is to take out either an enemy aircraft carrier, or land base depending on which plane you control. Of course, the opposing aircraft will be trying to destroy your own boat or base, as well as you.

The screen is split to show a view out of the cockpit for both players. As both are in the same air-space, when one flies in view of the other, it appears in the appropriate half of the screen.

Ace 2 is not so much of a simulation as many similar games, due to the simplified flight controls. No messing about with flaps and undercarriage in this game, which is something I welcome. It gives a smooth exciting coin-op feel.



Ace 2 is an enjoyable game, but my main criticism is that apart from the boat and the base, there are no ground features, just plain yellow when flying over ground, and blue over the sea. When the targets do come into sight, they are simply dots for most of the time. Flying close enough to view them as a small sprite is very difficult and unless your reflexes are quick enough can result in a spectacular crash.

The graphics are simple, with just land and sky to look at most of the time. A soundtrack by Rob Hubbard plays on the title screen, and in the game at the players' request, which can replace the simple sound effects.

The one player game, played against a computer controlled opponent can pall after a while but needs fierce concentration to master, but the game when played in two player mode really comes good.

It offers exciting and challenging competition that will keep the players locked to the screen. At first, it looks easy but the fast manoeuvrability and complex moves make it hard to beat a skilled opponent and fun to go on trying. Dedicated simulation fans may find there is less technical detail than they might think usual in the simple flight simulators, but those who just like to play a game as well as find out about flying will find it very well worthwhile.

T.H.

Price: £9.95 (c) £14.95 (d)
Graphics: ★★★
Sound: ★★★
Playability: ★★★
Rating: Crisp

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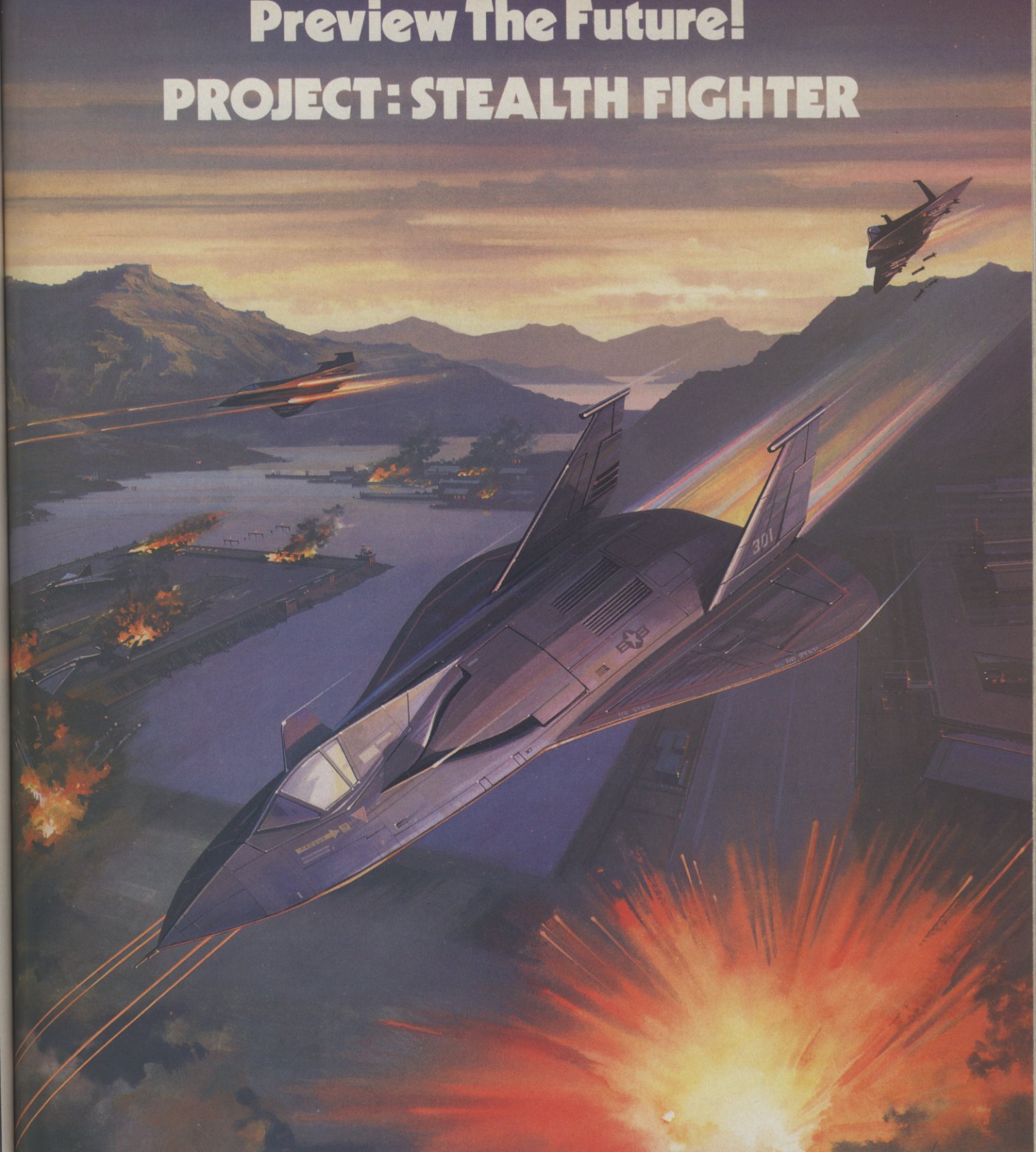

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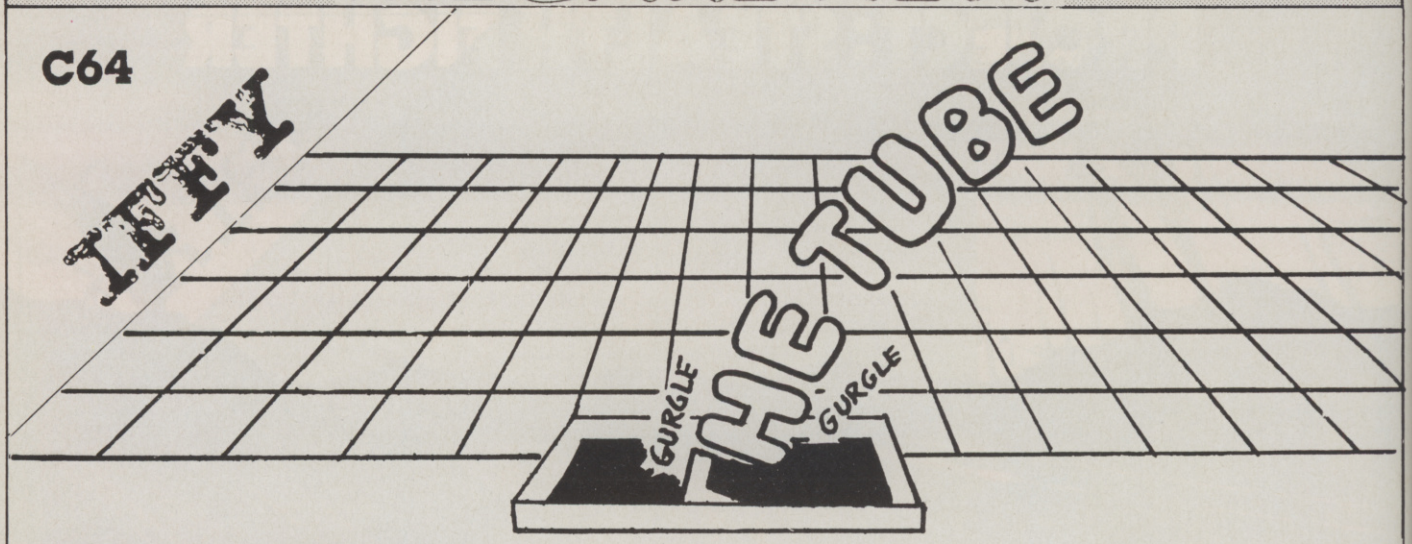
C64



The Tube — Quicksilver

I have to say I'm tiring of all the mediocre shoot 'em ups going about at the moment. There are so many that to stand out, and to capture a large amount of the evermore discriminating and demanding public, a game needs to be very professional, and exciting to play, not to mention containing something special in graphics and sound.

The Tube is neither outstandingly professional or terrifically exciting to play, although it is certainly marginally more original than the bulk of existing shoot 'em ups.

The game is split into three sections. The first section is entitled 'The Transfer Zone'. Your ship is flying over a grid towards a rectangular hatch that's spewing aliens and debris. If any of this makes contact with your ship you lose energy. this stage is displayed in 3D as if looking out from the cockpit. I'm not quite sure why, but instead of a whole view being shown, a window on the action scrolls around with your gun sight in the middle. A timer ticks down and represents the distance to the next stage. The 3D grid works well, but the effect is spoilt by the hatch which never seems to get any bigger.

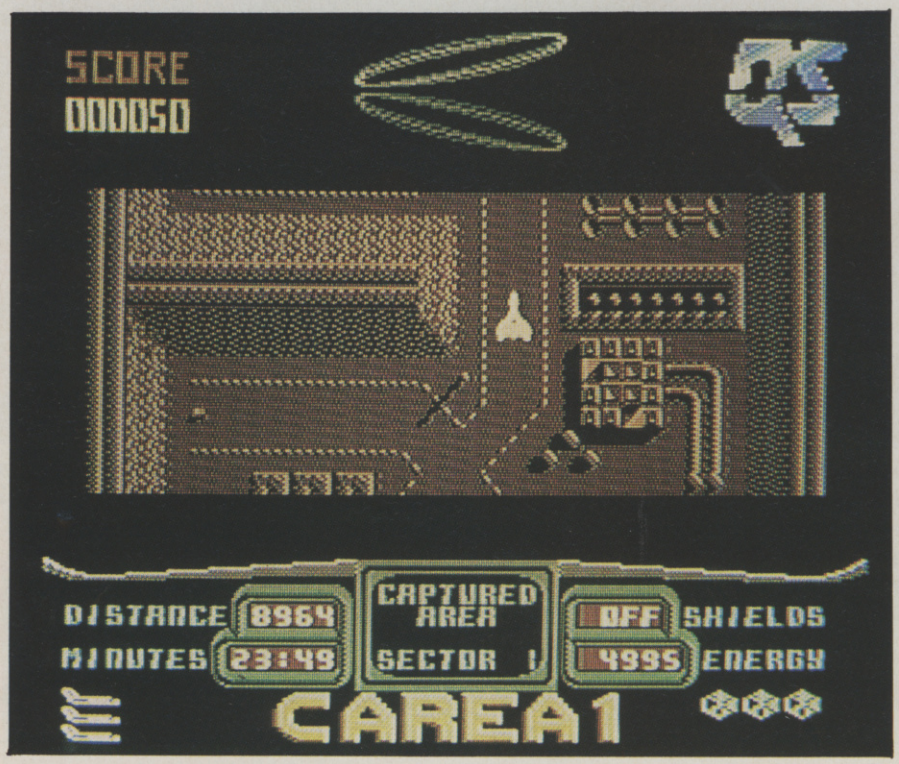
Stage two is called the 'DMT'. You ship is shot from left to right into a scrolling tunnel. Along the top and bottom are defence mechanisms which are triggered as you approach. This stage is very similar to the age old arcade game Scramble, with missiles launching up straight in front of you, and also coming down from the top. The graphics in this section are very small and colourless — unfortunately typical of all three stages. If you reach the end alive you advance to the third section.

Stage three is the 'Capture Area', a dump for all the ships caught by the tube. The ships stay here until the creators of the tube dismantle and strip them of anything of value. Most of these still have energy crystals in them which can be yours for the taking if you can gain access by solving a logic puzzle. Once past this stage, it's back to the beginning, where you have to do the whole thing all over again.

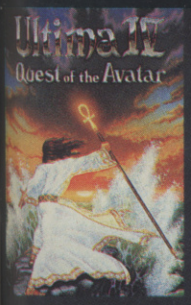
The Tube has an attractive title screen, with some run of the mill David Whittaker music. The graphics and sound in the game are very simple, and do little to excite or provoke further play. I found the first stage especially boring even though it only last about a minute.

I could not recommend The Tube as a full price product. Even at say mid or budget price I wouldn't rate it too highly. I'm afraid this is just another shoot 'em up that doesn't make the grade. It's a pity, there is some good programming talent behind this which given the proper encouragement could have come up with something more successful.

T.H.



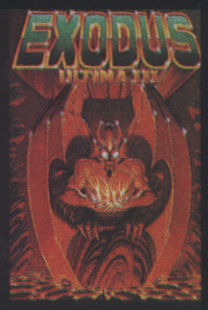
Price: £9.95 (c) £14.95 (d)
Graphics: ★★
Sound: ★★
Playability: ★★
Rating: Iffy



The latest adventure in the award winning Ultima saga

Ultima V

Warriors of Destiny



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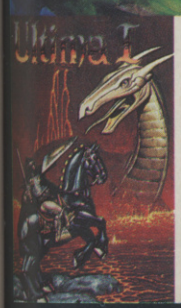

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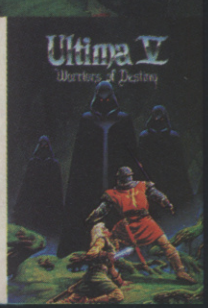

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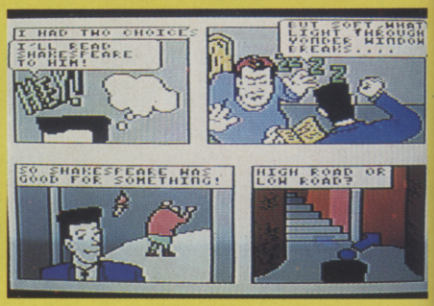
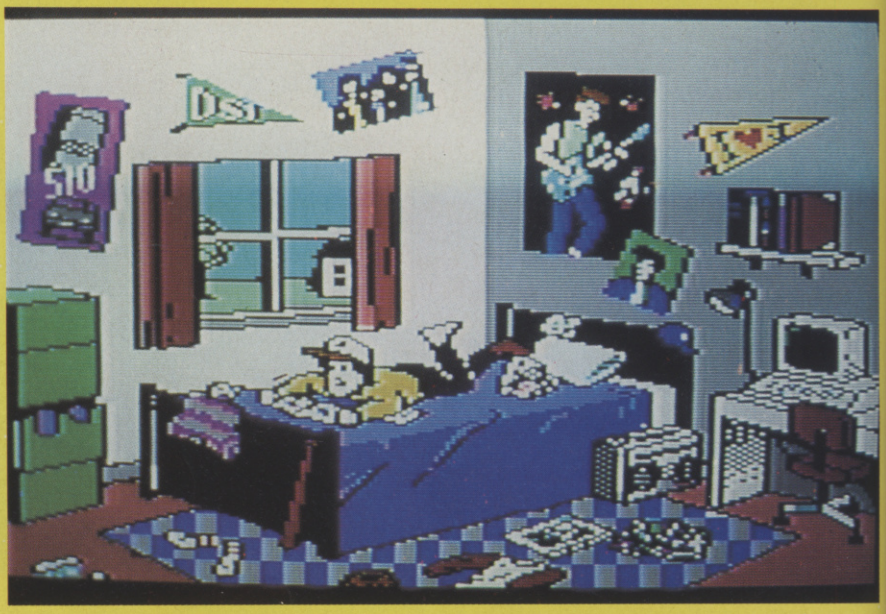
C64

MEGA





Accolade's Comics — Accolade (disk only)

If you're one of those people who get really engrossed in a comic, be it 2000 AD or The Beano, and you are lucky enough to own a disk drive, Accolade's Comics are for you!

In this very original game you get to play the part of Steve Keene, private eye, smoothie extraordinaire. The adventure starts in a big city somewhere in the USA. You begin by meeting the boss at the local pet shop where he gives you your briefing for your next case.

The first few scenes of the game are non-interactive comic strip pictures which set the scene. Each picture is loaded from the disk at the player's command (a press of the joystick button). If, after a short while, the button has not been pressed, the next picture comes up automatically. At approximately three picture intervals, you are presented with a choice. This can be a choice of direction, action, or speech. Your selection is made by moving the joystick in the appropriate direction and pressing the fire button. Some choices affect the story in a big way. Others can simply serve to satisfy the anarchic streak in us all, or liven up the game with some sort of childish, but funny situation.

As you play, you can either be serious, and try to complete your mission in a mature manner, or select some of the many cheeky replies. These will often get you further than the sensible ways.

Your mission, should you choose to accept it, is to rescue the kidnapped professor. On your adventures you encounter a world full of traps, mysterious men, villains' hideouts and find that there's still more heroics to be done. I won't say what exactly, as it wouldn't be so much fun when you find out for yourself.

As well as the multiple choice comic strip, there are a number of arcade games that require joystick skills to get our hero out of tight spots. These are all fairly simple, but make a refreshing change from the main game.

Most of the pictures have some form of animation. This can vary from a simple swinging key-ring, to Steve Keene demonstrating the talents when it comes to fisticuffs with a swift SMACK in the gob for an unsuspecting baddie. Before the game starts, there's a little sequence with an especially well animated silhouette of the programmers 'at work'.

Throughout the game, a few suitable tunes play which create an appropriate atmosphere. The graphics in the game are consistently excellent, with brilliant use of colour, and great characters.

There is certainly a lot to this game. This is obvious through playing, and also when you notice that it takes up *three* double-sided disks. I have some doubts concerning its lasting appeal, as when all the possibilities of the story have been discovered, there may not be much incentive to come back to it, but this is only a minor point. Comics is an excellently designed game which has a great sense of humour and one which I would recommend to disk users everywhere.

T.H.

Price: £29.99
Graphics: ★★★★★
Sound: ★★★
Playability: ★★★★
Rating: Mega

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When Origin Systems, creators of the brilliant Ultima Series, collaborate with Strategy Board Game Supremo Steve Jackson, you can expect the most challenging, most original Strategy Role Playing games around!

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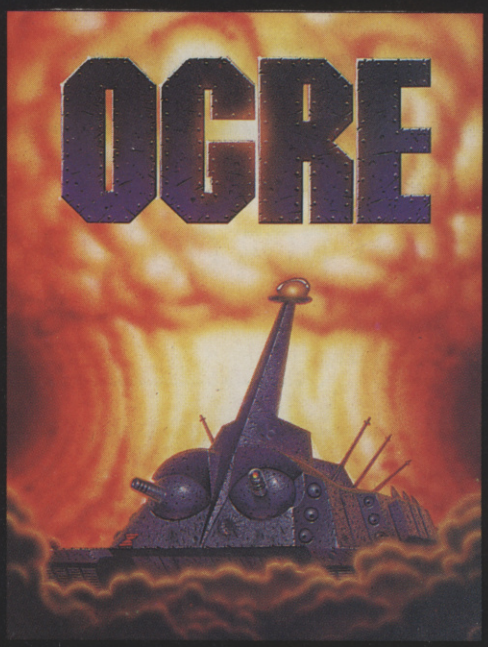

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C64

MEGA

Epyx Epics — Epyx

Epyx, one of Americas foremost games companies, and known throughout the world for their quality releases and scrupulous attention to detail, have decided to release a compilation of four of their older games. Because these games are so old (in computer game terms anyway) you'd think that they would seem a little dated but they have stood the test of time particularly well. This just shows how far ahead Epyx were, (and still are) of other companies and their time.

Breakdance, is the first game on the list and is of a lower standard than the other games within this compilation. It involves you, a super-cool breaker, pitting your skill against other rival dancers. There are four different play options which are as follows. 1. Hot Feet Dance Contest — You, and Hot Feet, the best dancer around must try to burn each other out (beat him by dancing better).

2. Battle The Rocket Crew. This time you must fight off a gang, who are trying to push you into the water by the pier and "take over your patch".

3. Perfections and Dance Puzzle — Nobody is breaking with your anymore, because you're so good, so now you must meet THE hottest breaker in town, "Bugaloo Brewster . . . the one they call the King."

The fourth option involves your choreographing a whole series of moves and then getting your little character on the screen to dance them, this part is quite good fun.

This release was Epyx's worst ever, and I still don't like it, after a couple of years of forgetting about it. But the thing that really gets me about his game is that it *seems* good, and is presented in a friendly and meticulous fashion — with info on all breaking terms and moves. Not bad for £2.50 (whic is what each of these games come to) if you divide up the total cost.

The next game, Impossible Mission needs no introduction to old C64 gamesters. When it was released it stunned everybody with its graphics, animation, sound (the excellent speech) and gameplay.

The Elvin Atombender was once playing a computer game, he played for several days and was just about to shoot one more alien, which would give him a super score, high enough to "max out" the computer, when there was a power cut. His mind snapped, and since then he has had a grudge against the world.

This is where you come in — you must try to penetrate Elvins' defences and find the codes you need to disable a missile which is to be launched in 6 hours.

Thus starts your mission, a seemingly impossible task fraught with dangers. You start play in a lift, with which you can control which of the many floors of Elvins home you want to travel to. Get out of the lift and you start running — either to the left or the right, and you enter one of the 32 rooms in the house. You must search the house and find parts of a puzzle which when pieced together gives Elvins password.

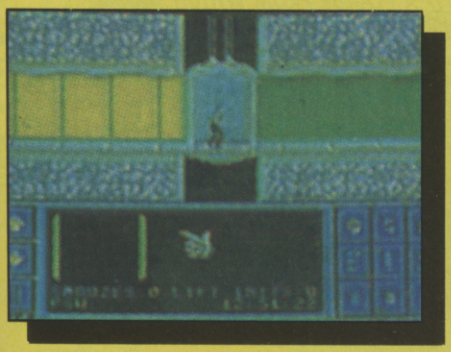
Robots in each of the rooms try to shoot you and target you , using sound and motion sensors, and infra red photocells.

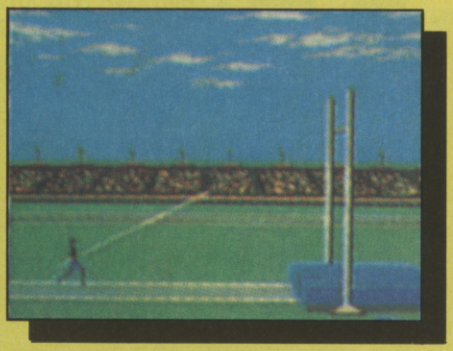
This is an incredible game, and for a release that is two years, or so, old, has stood up remarkably well, the speech as you start the game is excellent as is your scream as you die!

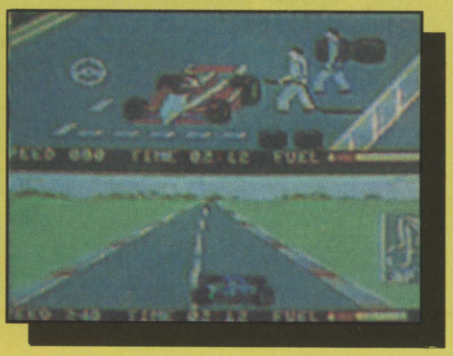
Pitstop II is the third game in our magical Epyx tour and is once again a classic by the standard which all other racing games are now judged. When first released it was hailed as an innovative and exciting step towards more realistic gameplay.

As the game is loaded, you are presented with a menu of options with which you mould the game. You have to select the number of players and the number of laps, the difficulty level sees to how good your main computer opponent and the other racers are, and the track you wish to race on can also be changed.

Once the race is started you must accelerate away and try to get the edge on your opponent, (real or computer controlled) so you can block him/her off if they try to overtake.







Summer Games is the penultimate game on the tape and needs no introduction. It's similar to Track and Field but approaches the sports in a realistic manner which not only involves joystick bashing, but skill and timing.

The events are: Pole Vault, Diving, 4 x 400 metre Relay, 100 metre Dash, Gymnastics, Freestyle relay, 100m Freestyle and Sheet shooting. The graphics are a little bit dated, but are still of quite a high quality, and all of the events are very playable.

All in all this is an excellent compilation that exudes quality. The care and time taken on the games shine through, and all the games except for Breakdance are worth getting. Think of it as three games for £3.30 and a free game thrown in!

C.K.

Price: £9.95
Graphics: ★★★★
Sound: ★★★
Playability: ★★★★★
Rating: Mega

Your fuel and tyres must be replenised and changed, and you must have a pitstop to top up and put on new tyres. Once you become adept at this, you begin to have faster times and the advantage in races.

This game really comes into its own in the two player mode and its smooth scrolling graphics make it a worthy addition to the tape.

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WIN! WIN! WIN!

Electronic Arts are really making waves. They are bringing in some games that are making everybody gape. Really sensational games of all kinds — not just things for the Amiga but some brand new games for the 64 and some reissued 64 and Amiga games that first came across the Atlantic at prices that probably put them out of reach of most people. We've taken a look at their release schedules and across the main formats they will be releasing 67 games in the next 2 months! Two of these very special games will be Legacy of the Ancients and Bards Tale II. Both of these games are reviewed by Andy Moss in our Adventure section this month though they will certainly appeal to lots more people than just adventure addicts. Legacy of the Ancients, in fact, has 24 dungeon levels, 12 different towns and five arcade style action games in it. It's got full colour, scrolling 3D mazes and, Lesley of Electronic Arts tells us with a delighted shudder, the squish of swamp muck between your toes. (How'd you like to find that under your monitor? How'd you like to find *her* under your monitor?)

As for Bards Tale II, Andy Moss calls it "A magnificent piece of software . . . that begs to be played for hours . . .an experience in state of the art programming that you can only sit back and admire."

Well, we've got *25* of each of these Electronics Arts masterpieces to give the first 50 brilliant CCI readers who can tell us:

1. The name of an Electronic Arts game — not these two — pictured somewhere in this CCI.
2. The name of an Electronic Arts game that has the number 2000 in its title.
3. The name of Electronic Arts President (See Super Felix for a clue if you don't know).
4. Who was the Bard of Avon?
5. What are the prices for Legacy of the Ancients and Bards Tale II?

And in addition to the games, the first ten winners out of the Comp Sack will get Electronic Arts T Shirts — the first in the country to be given away!

Answers on a postcard please to The E.A. — L. of T.A. and B.T.II-Comp C/o CCI, to reach us by December 30th 1987. If the cassette versions aren't coming out, and you tell us you haven't got a disk drive, we'll send you another Electronic Arts game.

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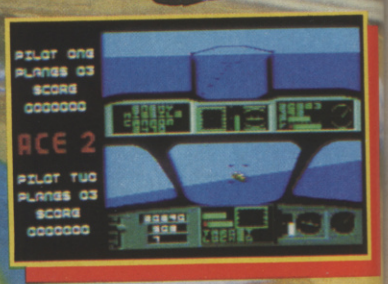

- *Air-air and air-ground combat.*
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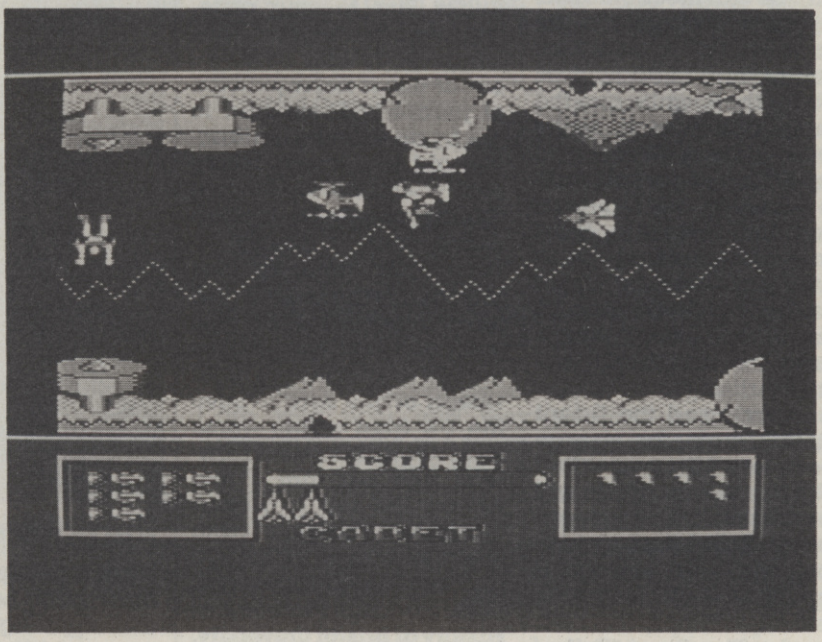
ACE 2
THE ULTIMATE HEAD TO HEAD CONFLICT

Screen shots are taken from the C64 version.

C64

DODGY



Challenge of the Gobots — Reaktor

This game is very appropriate, as like the cartoon and toys it's based on its very unoriginal. The idea of the game is to destroy all the bases on each level. The games looks similar to most scrolling shoot 'em ups eg. Defender, Nemesis etc., with land and bases along the bottom, and a similar reversed land at the top.

Your gobot starts off as a plane, and drifts to the bottom where it then transforms into a robot. When in robot mode, you can pull up rocks that can be thrown at the nasties. Pushing up on the joystick causes your Gobot to take off. If you're in the bottom half of the screen, the gravitational forces pull your gobot down, but fly into the upper half, and the gravity reverses, pulling you up.

Along the ground and the ceiling are spherical bases and other structures. As well as these, there are scooters. These must be picked up and fired at the bases. The thing that annoyed me most about the game, was the need to use the keyboard to fire a missile. To destroy a base you have to fly near to the ground, and reach for the keyboard. As the gravity is stronger here, and you're not holding the jokstick, this very often ends in death. Not entirely enjoyable!

Considering the prospective buyers of this game, (kids of around seven to ten years old) it's far too hard. Because of this, it would soon get frustrating and boring for them.

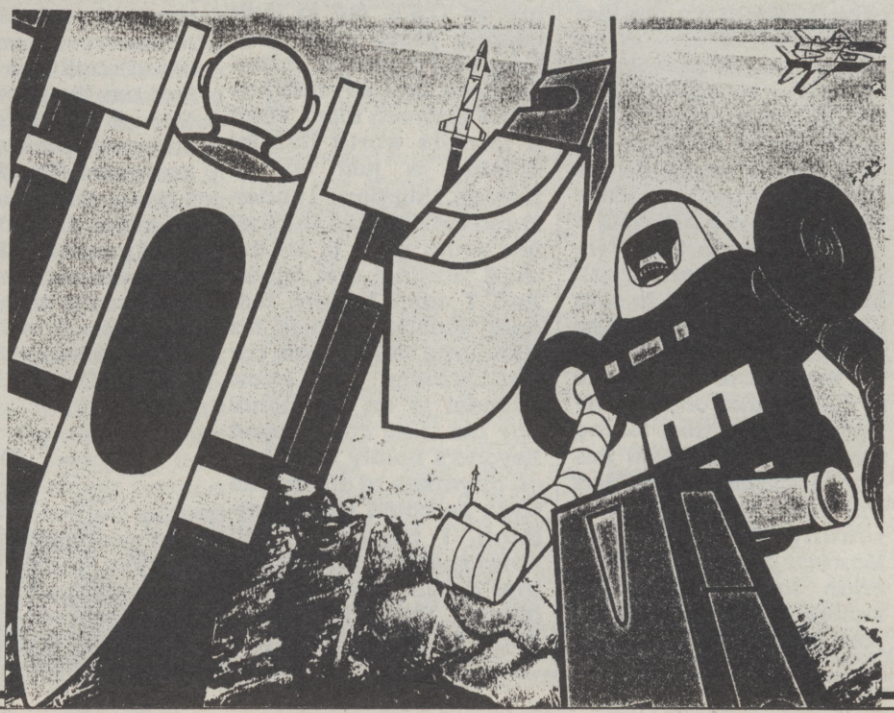
The game is well presented, with some original visual effects, and a tune from WE MUSIC that's quite entertaining once it gets going. The in-game graphics and sound effects don't come up to this standard, and are too simple.

With the game comes a 'book'. This is a program to be loaded into the computer, and consists of a number of pages, each with an illustration to go with the story. The pages are turned using a cursor and menus Amiga style. I found this not very exciting — the book not the method. Though I must admit to not being a fan of the cartoon series, perhaps I'm getting to old in my late teens!

Gobot fans would probably like this if only it were not so hard, and more experienced gamers possibly won't go for it because of its title. If you feel you're both a Gobot fan and a skilled joystick jockey, give it a try, but I couldn't recommend it to anyone else.

T.H.

Price: £9.99
Graphics: ★★★
Sound: ★★★
Playability: ★★
Rating: DODGY

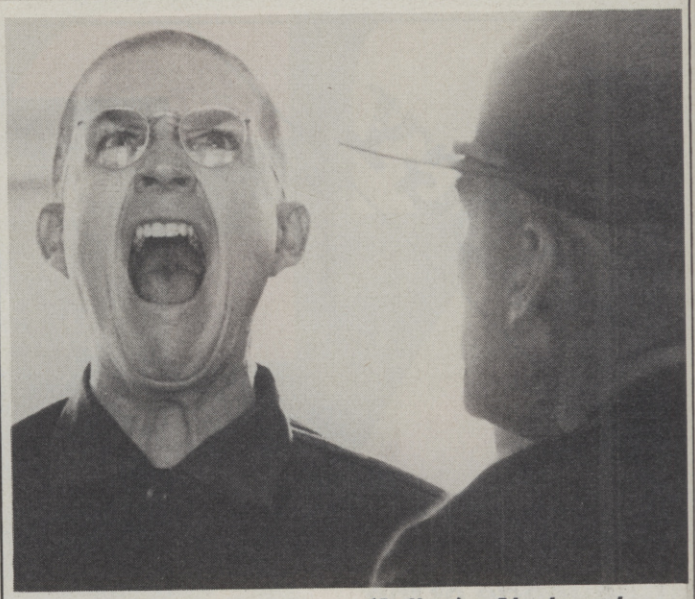


Electronic Tart

Is it true that Electronic Arts is really buying up the whole world? I hear that their eastern headquarters is to be the Kremlin and the whole Gulf War is really about whether DPaint and Earl Weaver Baseball shall be translated in Arabic in Baghdad or Tehran. But I can authoritatively deny that Trip Hawkins, next President of the US once EA has taken over Pennsylvania Ave, and the Capital for its Artists Work Stations has purchased the Orient Express train for storage space for all the games that CRL, Nexus and others will be creating for them. Nevertheless, their latest acquisition may be the most important of all. Forget the New York Times, the BBC, Pravda, The Great Wall of China and its posters and Herb Alpert's A&M Records. EA (or Erectronic Hards as they call it in Beijing where they are using Instant Music instead of rhino horn as an aphrodisiac these days) has bought up the all powerful PR person Lesley Headlines. Yes, folks, we all have our price — and mine is Dover Sole broiled in Whiskas — and the lovely Lesley, once the pride of Edgware Road and its Sheikhs has hers. So they have given her Terminal Three of Heathrow Airport for an office; so she received 40,000 square feet in elegant Slough for an 'entertainment' suite. So she has carte blanche to call the US Treasury and tell them to print any sum she likes for her salary. So she gets to say hello to Mark Lewis twice a week. Will it really be worth it? (Well, the Mark Lewis part might). But — as she used to sing when she starred in 'Kiss Me Kate' on Broadway, and the Bristol Old Vic. 'Where is the life that once I led? Independent, free, telling the magazines, 'print this story or Clement Chambers will come to see you personally! Report on this Martech game or I'll send Brian Jacks around. Put Robtek on the cover or it's *your* photo that will be in Hollywood Strip Poker, Buster!' Ah, as she told Bucks Fizz to sing once, 'Those days are gone'. Now she is body and soul — I swear this is not my choice of phrase but was said to me by an extremely attractive girl who knows Lesley really *intimately* — an 'Electronic Tart'. I have heard that if Lesley — have you noticed that presciently the second and third letters of Headlines spelt 'EA'? — only sacrificed herself to take the job of PR Queen of 'the Arts' to save the UK from a fate worse than death. President Hawkins told her that if she turned the job a certain Margaret Thatcher (who she?) had sent in her CV and was being interviewed. Lesley — once Professor of History at Bristol University, didn't want to change the fate of the nation and bit the platinum bullet. Don't forget she's sacrificing herself for you and me! I hear that two or three days a week now she just lies back and thinks of England.

Sob! Sob! S.O.B.!

What's this I hear about the Illegible Michael (Solutions? I have them all!) Boxter and his great and good friend Jim Darling of Codemaster are parting company? They were always so close. They even invited O.S.E. out to their country place near Banbury. Now a woman, called I believe, Lynne Franks has come between them. What a terrible world this is! Fidelity is just out of fashion, I suppose. I understand the Illegible Michael has sworn never to use the word 'darling' ever again. And I can't believe that dear Michael crashed his wonderful white sports car *deliberately!* I know Michael is an emotional boy but if he could stand Beyond's boldly failing to go anywhere at all Trekkie saga he could stand anything. I personally will never speak to Jim Darling ever again. Promiscuity, I always think is cheap. About £1.99 to be exact.



(Acting) Lieutenant — Colonel Bully Brown questioning Sgt Tony Horgan on why he's reviews are always so favourable to Ariolasoft's spate of recent disasters — sorry — games.

Reaktor else

What is going on at the late Ariolasoft? Lady Amanda du Barry struggles manfully — sorry girlfully and is still acknowledged one of the crême de la crême of the industry but not even her girlful efforts can hide the flow of less than mediocrity that is coming out under various names from the once proud Ariola stable. Say what you will about the late bearded twins Ashley Brunger and Frank Gray — he used to play so well for Leeds United — they did have a certain devil-may-care Marble Madness about them. They are sadly missed, it seems, for somehow a pall, grey and depressing, falls over the hundreds of CCI games reviewers who want to fall bloodthirstily on any game that has the nerve to enter through CCI letterbox. You know my opinion of Games Reviewers. (You don't? Well, I hope you've had dinner because I don't want to spoil your appetite.) I know they are vicious but they are usually a fearless lot. But even I feel sorry for them when the name Reaktor — the new Ariola label — echoes thru our corridors. They take to their heels and scatter, screaming. One or two throw themselves from balconies. Many hide whimpering beneath desks. Not a few simply plug themselves in their 64 power source with a drinking flask and a blinding flash. It's only the hardened Tony 'Nothing can sicken me!' Horgan, Bud 'I've eaten raw snails, I can just take Reaktor' Vennos and the licensed game killer Courtney King, Sir who stand up and play defiantly. Even they, calloused hands and tongues, emerge shaken and trembling. Can it be that Amanda is fighting a lone and futile battle, that the rumour that if she doesn't keep her lip buttoned about what's really going on, she'll be the next Bride of Frankenstein is true? I don't know but it's not a pleasant thing to watch this once great games house fall boringly in ruins. Even if they have moved from Covent Garden to a raft on the Thames moored at Putney so Lady Amanda can throw buns to her friends among the Oxford and Cambridge rowing blues on Boat Race day.

Painful Complaint

Millions of letters are pouring into Our Sacred Editor complaining about your own dear S. Felix. Wail! Miau! Sob! Everybody hates me! Well, 2 letters have poured in which only shows to go how famous I am and how terrified everybody is to complain really! Snarl! Yowl! Laught like a hyena! if you know what I mean... The first contemptible missive — it was thoughtfully wrapped around a large brick — had the nerve to suggest — what insults some foulmouthed people can think of — that I was a "professional journalist" and "indulging myself" and while not wishing to cost me my "job" wanted me stamped out and put to sleep. Nice, eh? O.S.E. wouldn't give me the address of this homicidal thug hooligan maniac (he did sound a bit like Andrew Wright of Activision) except to tell me that he lived in Buckingham Palace an was called the Duke or something or other. Otherwise I would have sent the boys — or rather the Pussies — round to him. Professional journalist! Yuk! "indulging myself"? I haven't done that since O.S.E. told me it would grow hairs on the keys of my Vic 20. Job? If it were not for the millions I am paid not to mention practically everybody (Telcomsoft and Ocean can well afford it) then how do you think we could print CCI on recycled human skin (ex-ZX80 users of course) and send spare copies to starving cannibal tribes in Southampton, Slough and Stevenage? The other letter, this one kindly wrapped around a Spanish Civil War hand grenade with the pin thoughtfully extracted, was from the frightful Andre JayGee's hysterical, sorry, Hispanical Mama, Dona Jacquelina Moko de Pavo ExMotores Geenerales y Bedfordio y Paella. She has written blaming me for everything in history from — I swear, swear, swear, this true! — the price of fish at Luton Airport to a mistake the scientists made in the age of the sun, which I think had gone to her head at the time or was it Sangria de Toro? She is threatening, unless I commit suicide slowly to make up for these little errors, to set on me the thumb-eating hound, Nelsonio Marina. Pah! Do you think S.Felix is scared of a mere DOG! Not on your Nellio! S.Felix — who has played Firebird games without flinching and without very often throwing up, taken enigmatic calls from a certain Julian Rosenphone demanding Transam modems or else, found Nick the Skatefreak hiding in a sleeping bag under the disk, seen P.R.T. Tisdall of US Gold playing with his bowls, survived a cup of Codemaster coffee and a Solutions driving lesson, sprawled on a wiped-out surfboard with Epyx' Helen ("Shall we try it the Californian way") Browne, shared secrets with Count David ("Pardon mewhile I run to phone the person concerned and tell her") Carlos, ridden rogue elephants with His Holiness Anil of Gupta Anco, been accused of "Character assassination" by the now ex-asst editor of Your Computer magazine, played the Barbarian with a certain Miss M.W. (I kid you not it was barbaric!) even read "Your Commodore" and only fallen asleep seven times! Do they think they can scare me? Even if the sinister André JayGee does drive a white hearse and his bullfighting on waterskis poet mum threatens to "smasher" me. But just in case, I've made a will. I'm leaving all my millions to you, dear reader. All my illgotten treasure is yours. I've divided it in two. One half is — I'm whispering now — buried beneath a certain villa in Campobello, Alicante, Spain — with all those maneating dogs around it seemed a safe place. The rest is under a pile of discarded lollipop sticks in a place called Ludlow which you won't have heard of. All you have to do is blow up both places and the cash is yours, Spaniards, if the Dons strike Devon, I'll quit the Port of Heaven and drum them up the Channel as I drummed them long ago. Viva Zapata! Banzai! Tortilla de Patatas! Cave Canem!

Auntie Felix Agonises...

I have been asked to give advice to some unlucky games players who find that they cannot load 'the bloody thing'. This happens because softare companies are very poor and they always produce one faulty tape out of every ten. A faulty tape costs less to produce than one that will run, about half in fact. They do not intend to cheat you and will always send you a replacement — another faulty tape — if you complain. So first make sure you have not got one of these — they call them "special" — tapes. If it isn't and still won't run, take it out of the datasette, hold the tape in your right hand and the datasette in your left and bang them together. This is called 'aligning'. You can then do one of several things. First kick the datasette to make sure that there is no dust in it and carefully spit into the tape holes. Then wash out the saliva with tomato ketchup. This is called lubricating the tape. Insert the tape again into the datasette and bang it in firmly with a medium sized hammer. If the tape will not yet run, do not give up hope. You must search for errors in the program. This is done by unspooling the tape from the cassette and examining it for any holes or odd marks. When the tape is in a pile on the floor, cut off a few yards and carefully wrap them around a magnet, the rest crumple into as tight a ball as possible and cram into a large used envelope. Seal with wax and send to the software house but do not include your name or address, with the request that the tape should be checked before being returned to you. Explain that they must return it in good condition or you will report them to the Advertising Standards Authority the Police, your M.P. and Dr Tom Watson. If you don't hear from them within seven days, take the magnet out of the tape andrun it over all the other tapes to see if they will react the same as your original problem tape. Then go and put your head in the lavatory and pull the chain. If that doesn't work why not try buying a computer — say a 64 — to go with your tape?

Who is this fascinating girl and why is she wearing a 5¼" disk in her ear? I hear you cry. (Or is that the howl of a werewolf?) Well, her initials are TDK — I am permitted to reveal. No they do not stand for 'Totally Devastating Kisser'. It is more than my life's worth to tell you — even if I know the story of the 5¼" disk. All I can say is she is the 'very very personal assistant' to a certain Captain Keith Milesàrtmiles (PM and private bars), new Production Supreme at CCI Towers. He met her, I hear, while he was producing a video week for the born again Middle-Eastern anti-white slave market. Captain Keith rescued her from a life of highly paid and very enjoyable sin and stardom in such hits as 'Disk Nibbler' and Diskusting Drives'. Any-

one who wants a free copy of TDK's illustrated life story should write to TDK — 'Perfect Alignment and How To Achieve It Every Time' c/o CCI Towers. Oh and the letter should be wrapped in used notes of 5 million florints (what the hell is a forint anyway?) Or phone TDK Who? at the I Thought You'd Never Ask Dept. but don't forget to be discreet.

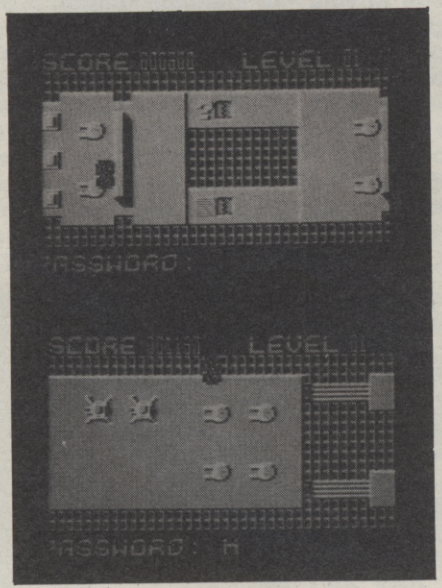
C16 C64

IFFY

Starforce Nova — Mastertronic

The year is 5112, and the universe as we know it no longer exists. Earth has been finally wiped out by being constantly nuked by enemy alien forces, and is now just a charred mass of uninhabitable, hospitable land (sounds like Basingstoke doesn't it? Ed). The survivors of this managed to escape from the hell hole that was once Earth, in a group of space carriers. Dr Corgill a brilliant professor, had also, along with organising getting the survivors off Earth had devised a plan by which people could be airlifted. Though he hadn't decided where he would airlift them to yet, he though that getting people off the Earth was a good enough start.

Unfortunately a couple of months later, a planet that was enough like Earth to live on was still not to be found anywhere. The decision was to travel into the 'F Dimension' was



made, and this is where you come in; as captain Paul Squires, all round good guy, and ace pilot it is your job to protect civilians from any hostile attacks in the 'F Dimension'.

There is no hint to what the 'F Dimension' might be, but it sounds mysterious so who cares? You must fly over a carrier blasting everything in sight and when you have passed over it twice, you must shoot some letters which make up a secret password, if you shoot them in the right order you progress to the next level.

The graphics of the game though pretty plain, look pretty good and professional. Sound is sparse and grating, leading quickly to irritation. On the whole though the graphics and gameplay make this good fun and well worth the price tag for an hour or two. The repetitiveness of flying over each carrier twice soon spoils any of its good points though and I don't know if I would be all that pleased with it after a day or two of playing it.

C.K.

Price: £1.99
Graphics: ★★★
Sound: ★★
Playability: ★★
Rating: Iffy

DODGY πr2

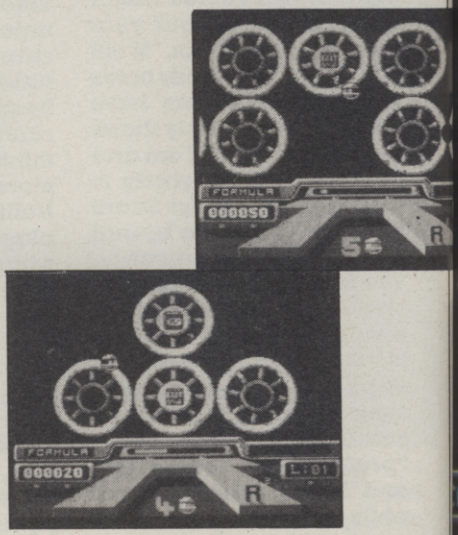
πr² — Mind Games

πr² is one of those games with an instantly forgettable storyline which pretends to be much more than it really is — and what it really is, is a very stupid, very boring and very frustrating game.

The storyline is stupid beyond belief, but reading it is a bit of a laugh and kept me amused for a couple of seconds. I found though, that as soon as I started playing the game, all amusement stopped.

The story goes that you are professor Brian Storm V.I.P. (very intelligent person) and you are about to make your television debut, doing a lecture on geometric solids. But "Oh No!" you have forgotten your script and so you must go inside your brain and pick up all the formulae that you have forgotten.

Now I thought the brain was made up of millions of brain cells but Mind Games have decided that it is made up of cogs and wheels which contain bubbles of thought. Each level is a series of wheels around which the character travels in order to collect parts of the formula he has forgotten. The formulae are broken down into simple components (ie. πr^2 into 3) and the parts must be collected in the right order; so for the formula



above 'π' would be collected first 'r' second, and '2' last.

Your movement around your brain is pretty simple; you move clockwise or anti-clockwise, depending on the direction the wheel is turning, and change wheels by pressing the fire button where a circle connects with another one. Your speed changes, depending on whether you are travelling with the flow or the circle or against it. If you pick up all the bits of the formula, but in the wrong order you have to start the level again.

Just to distract you from your picking up of the pieces of formula are stray thoughts, some home in on you and sap your I.Q. (life), others move around in a fixed pattern but also drain energy, and others are inside circle and when touched, paralyse you.

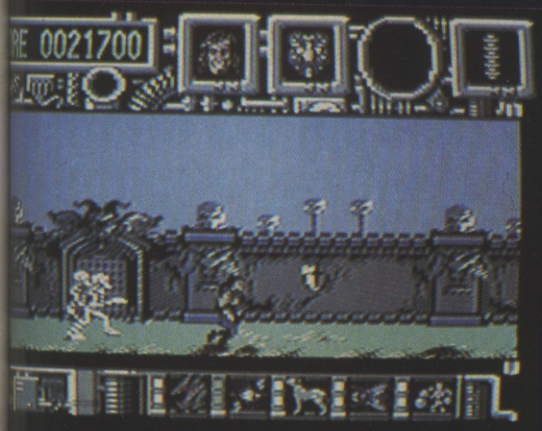
Graphics are attractive but boring, the music is irritating at the best and at worst drove the office into a murder-frenzy in which they tried to strangle me. (Did they succeed? Ed).

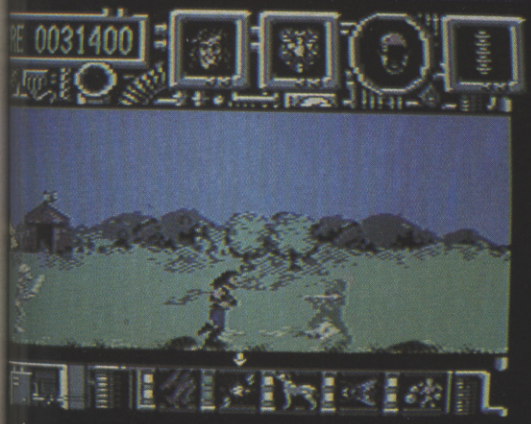
The gameplay is about as exciting as watching the second hand on the clock go around. With such a bad scenario this game was bound to fail and as such doesn't deserve any kind of attention by any prospective buyers. Anyway I think you've got the message.

C.K.

Price: (c) £8.95 (d) £12.95
Graphics: ★★★
Sound: ★★
Playability: ★★
Rating: Dodgy

Hysteria





PREVIEW

Hysteria — Software Projects

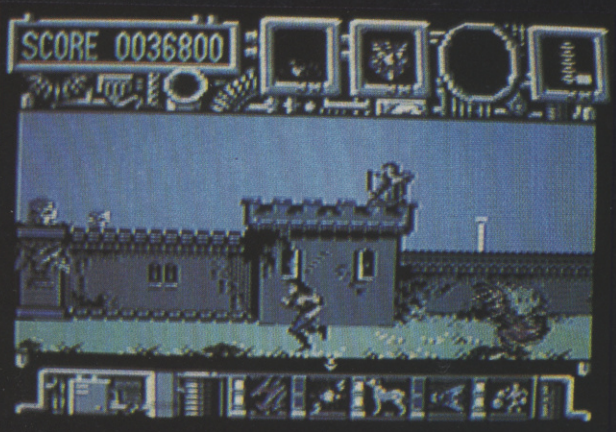
Hysteria is the latest game from Software Projects. The game has been programmed by an independent software house going by the name of Special FX. With main coding by Tony Pomfret, graphics by Karen Davies and music by Fred Grey, it looks set to be a great success.

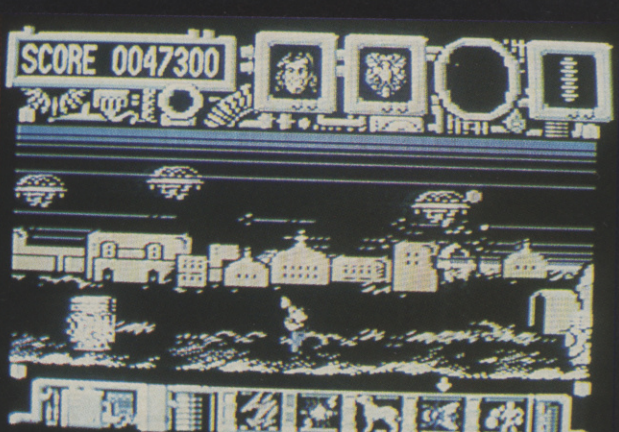
Now, it so happens that a fanatical sect in a bid to disrupt the future balance of power, is summoning a previously extinct primeval entity through the barriers of time. This must be stopped, and you, as the sole survivor of the once elite 'time corps', have been chosen to rid the world of this evil beast.

You have now been transported back in time to ancient Greece. Hostile time travellers aren't welcomed by the locals, and they will do all in their power to kill you. On your travels you will meet such monstrosities as sword swinging skeletons, charging horses and a huge thing at the end of each level. Survive long enough and you could be rewarded with some new equipment. One gives you baddie-zapping brain waves, and another gives you a jetpack.

Smooth in every respect and interesting and original to play, Hysteria is really something to look forward to.

T.H.





Terrific!

Hi-fi equipment to be won!

Newave is a totally new look in hi-fi equipment. Manufactured by Schneider, one of the world's quality hi-fi manufacturers, Newave blends contemporary style and co-ordinated colours with quality sound.

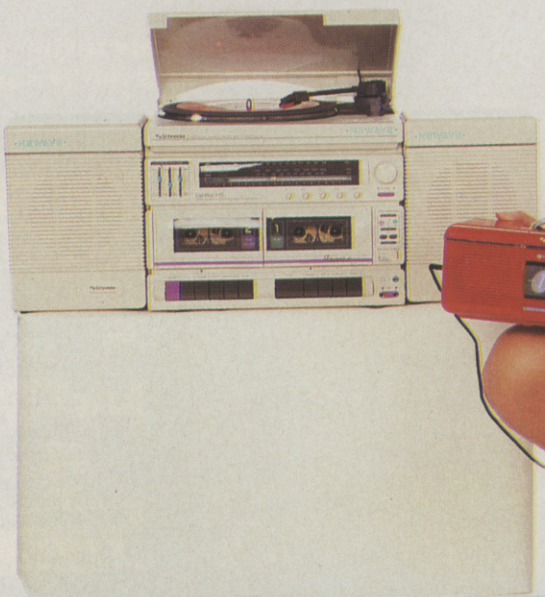
First prizewinner in CCI's competition will receive a Newave Midi 2100 Hi-Fi System, which is worth £129.95. It has FM Stereo MW/LW, twin cassette deck, stereo record deck and loudspeakers and a stereo amplifier with 15 watts total output. Like all the items in the Newave range, it comes in a choice of three colours: ebony, ivory and burgundy.

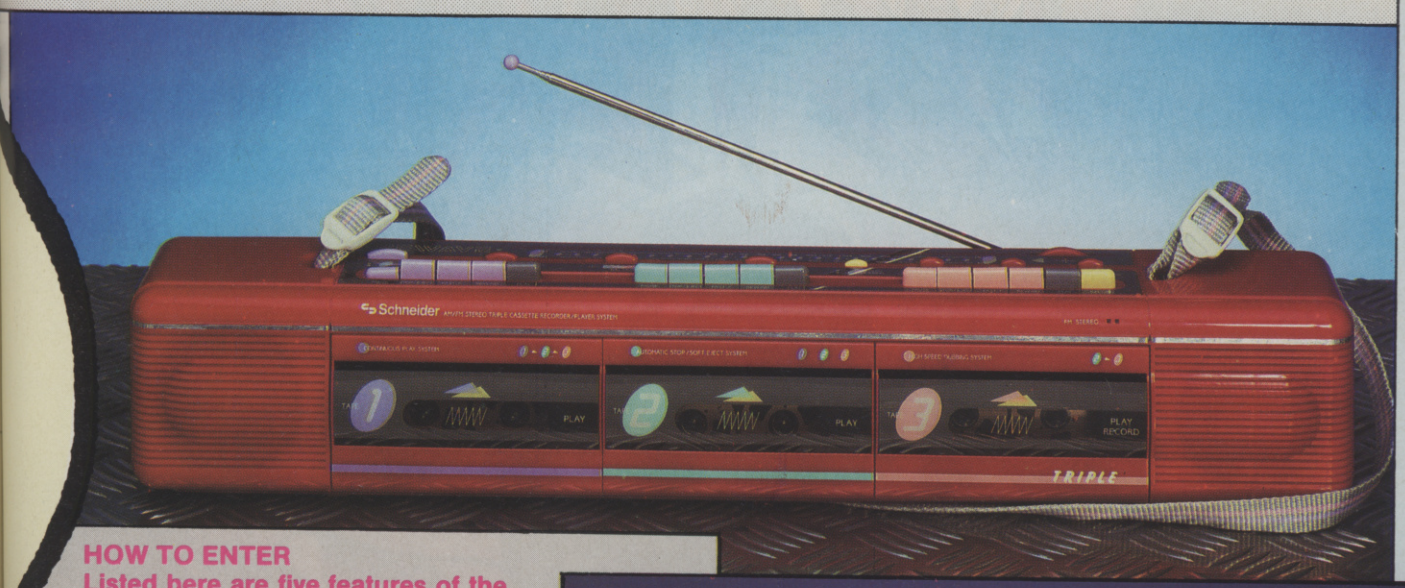
Three runners-up will each receive a Newave Fp 1010 portable radio-cassette recorder. This incorporates a triple cassette feature, with continuous play and high speed dubbing facility. It can be used on both mains and battery and has a telescopic aerial and carry strap so that the listener can enjoy music at any time, anywhere. It sells for £79.95.

For the unlucky losers, you'll have to look in the best stores to buy them!

FIRST PRIZE:
Newave Midi 2100 Hi-Fi System, worth £129.95

THREE RUNNER-UP PRIZES:
Each a Newave FP 1010 *Triple* Cassette System worth £79.95





HOW TO ENTER

Listed here are five features of the Newave range of hi-fi equipment. Simply place them in the order you consider that make this range particularly appealing to the would-be purchaser.

Write the five key letters — in order of choice — in the blank spaces on the entry coupon. For example, if you consider "Competitively priced" is most appealing of all, write D in the first space; and so on.

Next, to help us in case of any ties, simply tell us why you would like to win our prize Midi system... in not more than 12 words.

Complete the entry coupon with your full name and address and post, in a sealed envelope, to: NEWAVE COMPETITION, CCI, 40 BOWLING GREEN LANE, LONDON EC1R 0NE, to arrive not later than Monday, 30th December 1987.

A. Modern contemporary styling
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RULES

Entries must be submitted on the offficial entry coupon cut from CCI. All accepted entries will be examined and the first prize awarded to the entrant who shows the greatest skill and judgement in assessing the five features. Remaining prizes will go to senders of the three next best entries.

In the event of a tie, tie-breakers will be judged on aptness and originality to determine the winner(s).

Entries arriving after the closing date cannot be considered and no responsibility can be accepted for entries lost or delayed in the post or elsewher. Entries not complying with the rules and instructions exactly will be disqualified.

The competition is open to all readers resident in the UK, except employees (and their families) of Commodore Computing International or Schneider UK Ltd.

Winners will be notified and the result published in a future issue of CCI. The Editor's decision is final.

ENTRY COUPON

NEWAVE COMPETITION

1	2	3	4	5

I would like to win a Newave Midi Hi-Fi System because: (complete with no more than 12 words)

.....

.....

NAME (Mr/Mrs/Ms) .....

ADDRESS .....

.....

colour ☐ ebony ☐ ivory ☐ burgundy

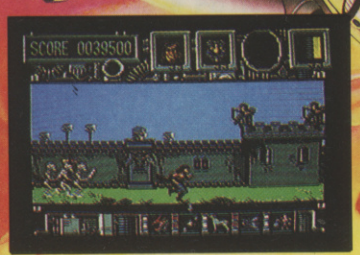
CUT AROUND THIS LINE

HYSTERIA

Sometime, somewhere, someone is changing th
future by altering our past. A previously extinc
primeval entity is being summoned forwar
through the barriers of time by a fanatical sec
whose aim is to disrupt the future balance o
power.

As sole survivor of the once elite 'time corps'
you have been chosen by the federation of law an
order to thwart this evil conspiracy.

Once exposed the entity will be forced to mak
an appearance in that time zone in order to destro
you and the evidence, you must weaken the mon
strosity and force it to retreat from whence it can
and continue your task in another era.



* Commodore 64/128 screens shown.
Other versions will differ from these shown.

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DODGY 'OWZAT!!

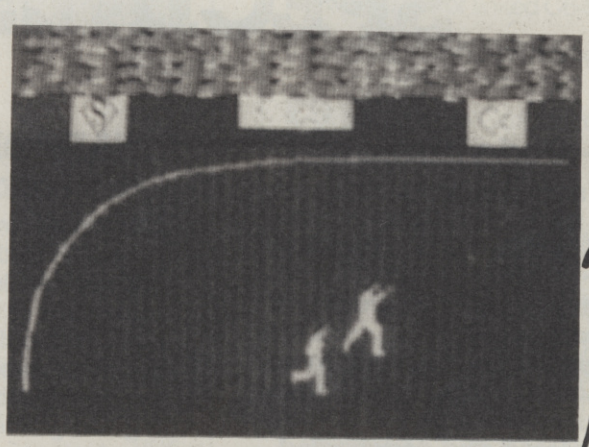
Graham Gooch's All Star Cricket — Audiogenic

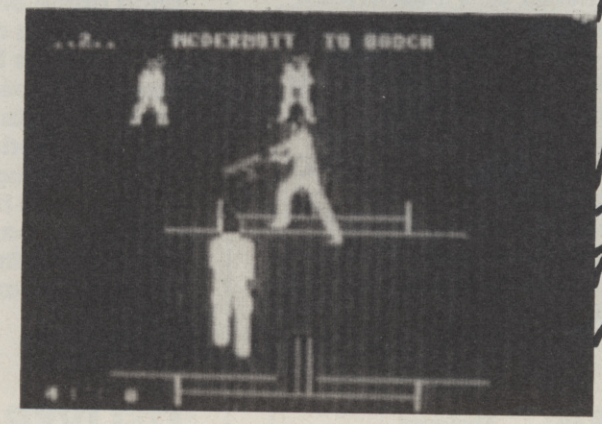
There can't be many sports more boring to watch on TV than cricket. The bowler polishes the ball, walks to the point where he will start his run-up, builds speed very gradually before bowling. The batsman usually taps limply at the ball, the fielders spend all day throwing the ball to the bowler, and the whole thing starts again (if you're still awake. However like many games TV reduces what is a subtle and fascinating sport to a flat uninteresting repetition. I therefore find it strange that anyone would want to make a computer game of cricket.

Audiogenic's All Star Cricket is in my view with its short bursts of action between lengthy waits an accurate representation of the game. It is a follow-up to the previous Graham Gooch cricket game.

Before the game begins, a number of options must be selected. An annoying system is used to start. A highlight moves down a menu, and the selection is made by a press of the button at right time. This fortunately can be switched to a more conventional system. First you must select whether to play a one day match or a test match. Next you select one or two players and the skill level.

All Start Cricket can be played in two modes: simulation and arcade. In simulation mode you play by telling the batsman or bowler how to play ie. aggressively, defensively, or which side to bowl. In arcade mode it's all down to timing and a bit of joystick waggling. The ball is bowled first by selecting which side to bowl. Then, waggle the stick to build up speed before timing the release of the ball. Batting is simply done by a well time press of the button.





The player has no control over any fielding. All catches are made or dropped by the computer.

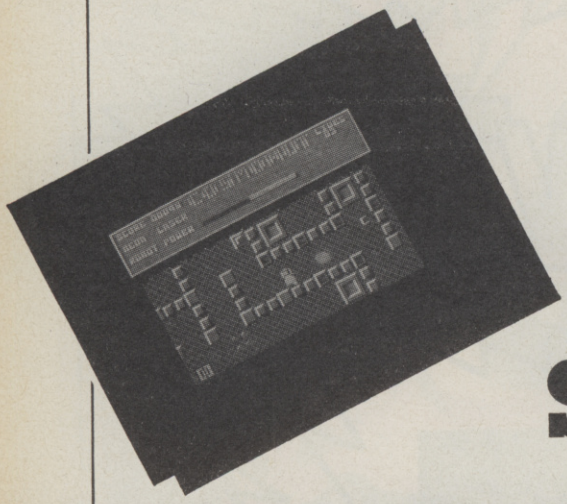
The game is seen from behind the bowler in 3D. The bowler and batsman are shown with large blocky sprites. The wicket keeper behind the batsman is a small blocky sprite as is the fielder to his right. When the ball is hit the screen changes to show the blocky but smoothly animated fielders doing their stuff.

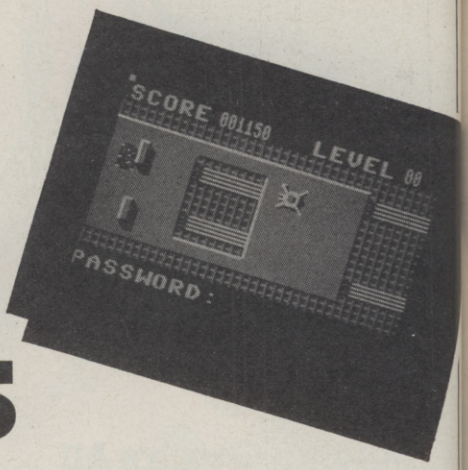
The gameplay is simple and soon becomes repetitive. There's nothing new, exciting or interesting about Graham Gooch's All Star Cricket. The idea of having a digitised voice to shout "Howzat!" is a good one, but the voice in the game is very uninthusiastic and not how a real-life cricketer might shout.

For the real cricket fan, this will be an attractive substitute on cold winter nights, but otherwise, I can't see it appealing to many, especially for £9.95 on cassette or £11.95 on disk.

T.H.

Price: £9.95 (c) £11.95 (d)
Graphics: ★★
Sound: ★★
Playability: ★★
Rating: Dodgy





BUDGET SPECIALS

COSMONUT — Code Masters

"Blah, blah, blah . . ." says the inlay. It's all there, battling robots, the planet Cybor, worker droids, and more, which all have nothing to do with the game.

A far more informative description would be "Paradroid with sub-games." Walking around a bas-relief maze,you must shoot the baddies and enter the glowing squares to go to one of three sub-games. There are seven of these in the first maze. Each must be entered and deactivated before you progress to the second maze. They are: the meteor room — jet pack it across the screen dodging meteors. Radio active waste dump — travel through the tunnel avoiding nuclear waste. Mega laser room — time your shots with the quad-laser to kill all the aliens.

Graphically, Cosmonut is simple, but attractive. The title screen music by David Whittaker is good, as are the sound effects. Cosmonut isn't brilliant, but there's enough fun for be had for two quid.

Rating: 7

BOULDER DASH — Prism

The Boulder Dash game concept must be one of the successful ideas for a computer game ever. It started with Boulder Dash, the highly enjoyable Mr Do derivative, and went on to have a sequel, then Boulder Dash III, and finally the Construction Set. Four games in all. The original is now available on a budget label from Prism.

The idea of the game is to collect a set amount of diamonds from each of the sixteen caves. The caves are made up of earth, rocks, diamonds, walls, and a variety of nasties. The first caves are easily completed, but the later ones need a lot of planning to avoid being trapped or killed.

Boulder Dash is pretty basic in the graphics and sound departments, but is a classic and great fun to play.

Rating: 9

STARFORCE NOVA — Mastertronic

Starforce Nova is yet another attempt on the now old, and battered them of Uridium, the uncrowned king of shoot 'em ups. For the full low down of this game just turn to the page with the C16 version on it because both games are exactly the same. That, I think is the big problem with this game because what will make a good game on the C16 is not necessarily a good game on the 64. Flying up a mother ship isn't my idea of fun, and seeing as there are so many games like this around at the moment already it doesn't raise any enthusiasm from me and is a definite thumbs down.

The one redeeming feature of this game is the music — though it is very simple, it's nice to listen to and has very pleasant sound fx. This isn't a very bad game or a badly programmed one. It's just that the idea behind it is too worn — for the 64 anyway.

Rating: 4

DELIVERANCE — Power House

The idea of Deliverance could hardly be called original. Rescue the princess by crossing a number of scrolling lands. In an attempt to inject some originality, the 'Power Mouse' on the inlay describes the aliens as lean, hungry, desperate bastoids charged with the Maadm of Rascal. I suppose it's more interesting to read than 'dodge the nasties'.

The game is played by walking and jumping on an over platforms and fire. The main difference between this and other such games, is that the background doesn't stop scrolling, so if you hang about too long, you get squashed on the edge of the screen.

Deliverance scrolls smoothly, but the graphics are rather colourless. The music's not much cop, but the sound effects are original. Deliverance is mildly enjoyable but nothing special.

Rating: 6

CONTINUED ON PAGE 96

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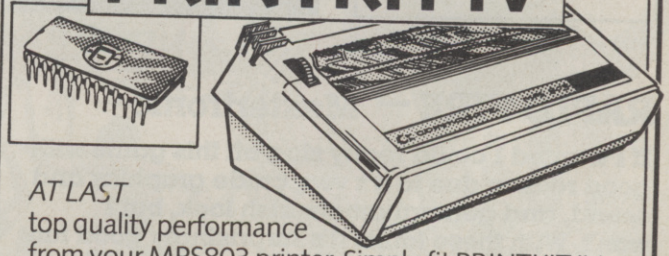

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BUDGET SPECIALS

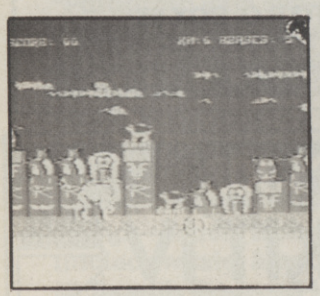
CRAZY COMETS — Ricochet

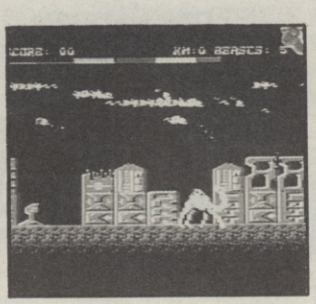
Taking advantage of all the Mega Apocalypse hype, Mastertronic have released its forerunner, Crazy Comets on their Ricochet range.

Your simple aim in the game is to restore order to the universe by eliminating chaos wherever it happens (That's my job! Ed.). This means shoot most things and collect a few. You control a ship that can move anywhere on the screen. a starfield gives a 3D effect as comets come out of the distance. These need to be shot as soon as possible, as when they grown larger they require a lot more shooting. Now and then a few rockets appear that can be collected for extra points. That's about it really.

The graphics aren't up to much but a good happy tune in tyical Hubbard style and good sound effects accompany the game. If you like the sound of Mega Apocalypse but don't have the cash yet, check out Crazy Comets as a cheap 'mark 1 version'.

Rating: 5





RAPID FIRE — Mastertronic

If I wanted I could really slag off this game with good reason due to it's very crude graphics and sound, and general ameteurish look, but I won't. With these faults it's surprisingly good fun to play.

Rapid Fire is not that unlike Kung Fu Master. You don't fight hand-to-hand, but are armed with a machine gun. The game is played over five horizontally scrolling levels with guards, snipers, fireballs, missiles and grenades to deal with. The idea of the game is to reach the end of each level and destroy the computer.

As no-one has yet converted the arcade game Rolling Thunder to home micros, I can play Rapid Fire, and with all the imagination I can muster, pretend that it's a Rolling Thunder conversion. Any game including the mass slaughter of humans or humanoids such as Nemesis the Warlock, Deathwish III and Rolling Thunder is fine by me.

If you're prepared to put up with its simple graphics, sound and even gameplay to an extent, you will find this well worth your while at only £1.99.

Rating: 8

RIVER RAID — Firebird

River Raid is another of the re-released Activision games now on the Firebrand Silver range. Unless I'm much mistaken, this was converted from the original version that ran on the old Atari game consoles. From what I remember of the Atari version, it's not much different. Doesn't say much for the interest token in the game, does it?

Your mission is to fly your jet plane along a river valley blowing up enemy bridges. These bridges are guarded by boats, helicoptes, tanks and observation balloons. Your plane somehow manages to fly at the same altitude as the boats, helicopters, balloons and bridges, so all these must be dodged or shot. The screen scrolls verticaly from the top with your plane at the bottom. Your speed can vary from mega-slow to slow.

Graphics, sound and gameplay are simple and typical of a game dated 1983. At two quid this could give some enjoyment to younger players, but there are many faster, better looking and more playable budget shoot 'em ups about.

Rating: 8

REVENGE II — Mastertronic

Revenge II is the latest game from Yak everlasting — Jeff Minter, master blaster games programmer and creator of classic shoot 'em ups.

It shoots up — sorry — starts up where Revenge of The Mutant Camels left off. Earth has been under attack from the hostile forces of Zzyax and "We, the people of earth are long unused to the rigours of conflict" (as it says in the inlay). So earth have decided to bring in the genetically engineered camels to save them in their hour of need.

You are a camel, you have five levels and must beat off 100 waves of alien attacks. You can choose levels from a grid, but can only choose levels adjacent to ones already completed. You can buy weapons if you have enough creds, but they only last for one level.

I find that this latest Minter game is fun and demanding of speedy reflexes but too limited in its appeal and think that it could have been improved upon a little more. Because once you've used all the different types of weapons, and got pretty far into the game things start to get a bit "samey". And the urge to continue playing is gone. All right for a quick blast, now and then though, and good for a budget range game.

Value 7

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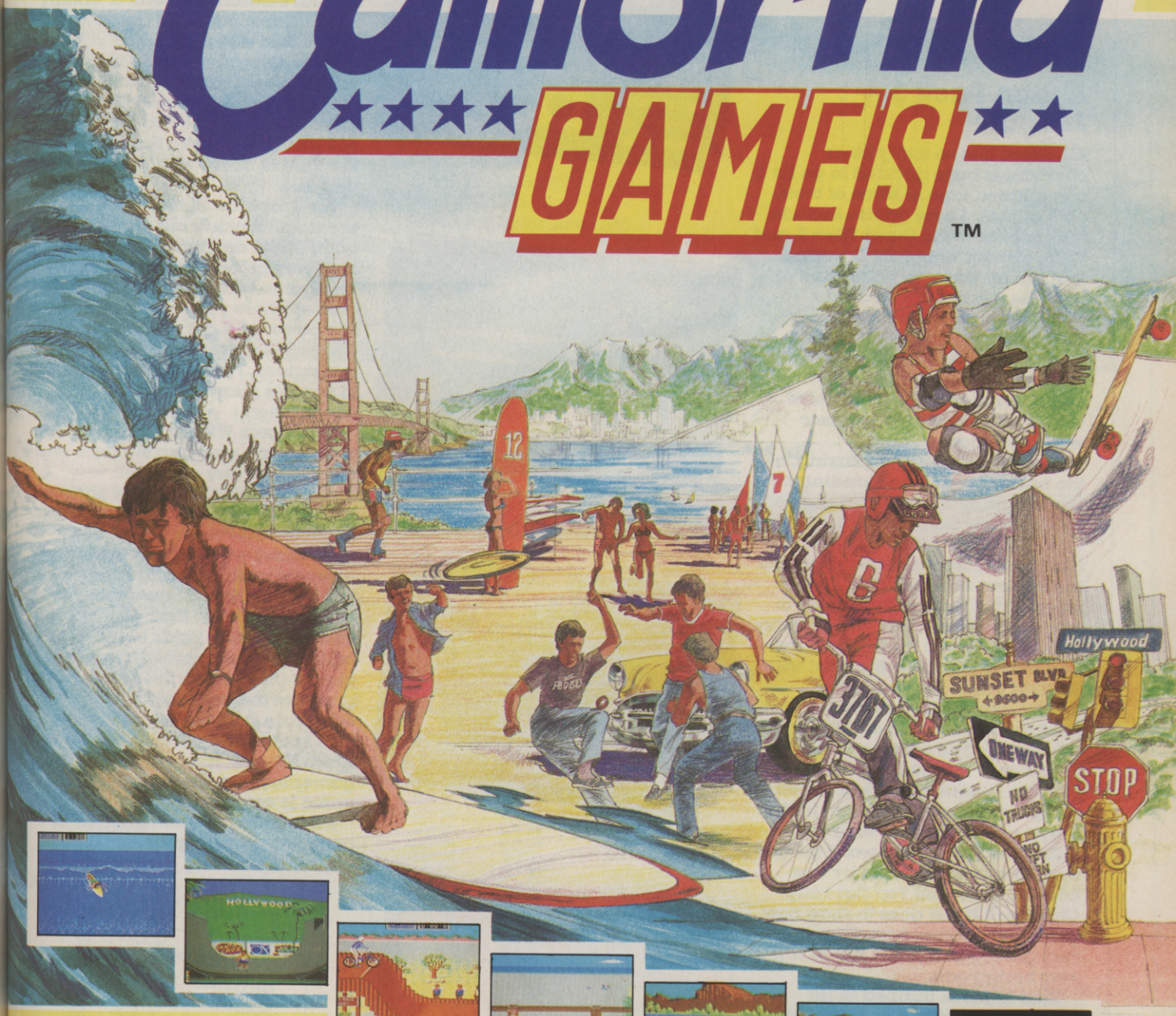

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Action Pack 3 — Alligato

Alligator, like so many other companies have decided to go for a compilation tape of some of their past games. These games include the excellent Who Dares Wins 2 and Trap, a shoot 'em up by Crowther that I think was very underated at the time it was first released.

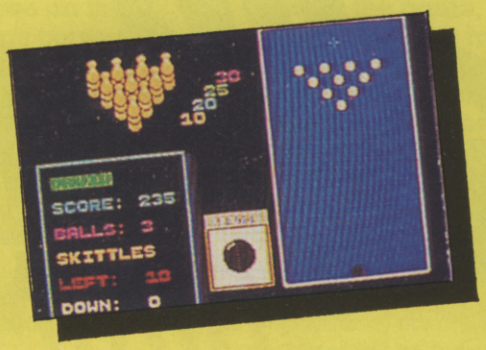
The worst game on the tape is Indoor Bowling. In every respect this game is bad; graphics are garish and incredibly blocky; sound is made up of white noise with a loud bit of cruddy music when you score a strike.

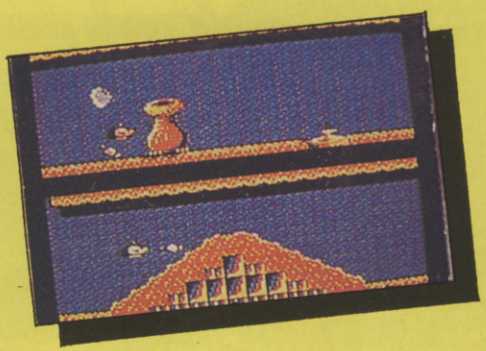
You get a view, when playing, of the back of your man standing at the bottom of the screen, it moves continuously from left to right and when the fire button is pressed, the bowl he is holding, swings from his blocky arm and rolls down the alley. At the back of the screen a target also moves and when the fire button is pressed the target stops and that is the place the bowl will hit. This game is very easy to master, but it also very boring and held my attention for a full five minutes (is that sarcasm I hear in your voice? If so shut up and get on with the review! Ed). If you get the compilation I wouldn't even bother playing this game if I were you.

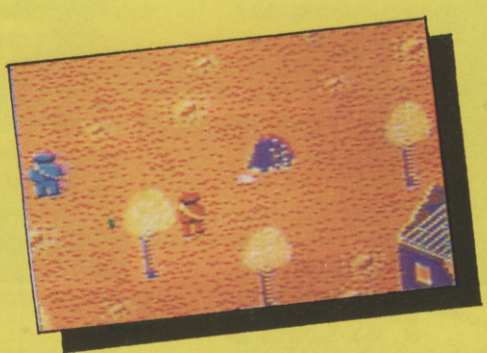
Kettle is the second worst game and, like Trap is written by ace coder T.C. (no not Top Cat Tony Crowther!) It just goes to show how greatly his games vary; Trap is a very good game, while Kettle is a very boring one.

Your kettle is trapped in an underground complex of tunnels and caves. You have to complete the game. You can start the game on level one or level 4, and when you've completed the fourth level you can start from another, higher level.

To escape you have to locate a tin opener hidden in "one of the bubble emitting bowels" you do this by firing at it with your Crizza — a thing that orbits around your kettle protecting you from hostiles. Once you have the tin opener the exit to the next level is revealed to you.







The best thing about this game is the two player mode in which you can help or hinder your opponent in a split screen game, and then things can get very hectic and entertaining. The graphics are very colourful and the whole game has a very polished feel about it, but I don't think that the idea has enough to it. It's all right for a compilation game though and is a good addition to the tape.

Trap, the other Crowther game on this tape is a shoot 'em up. You have to guide your space ship through several scrolling screens of enemy space ships, bombing and shooting aliens and picking up fuel.

The object of the game is to collect an Orb after battling your way through an asteroid belt and alien fire. Once the Orb is collected you can obtain extra fire power, in the form of a new ship which uses less fuel.

The graphics on the space ship are rough looking but are used to good effect and make the game look very professional as in Kettle. This game was one of the first games where you could increase fire power and get new ships, but it was not recognised as such by the magazines, I hope more people get to see this game now it's on compilation.

Who Dares Wins is the penultimate game on the tape and though now very old is still very good. The story line is very simple and you don't need to be a genius to get the aim of the game. You must shoot everything in sight and rescue your fallen comrades (ho-hum, where have I heard this one before). You must fight your way through 8 battle fields bombing buildings, encampments, jeeps, planes and sometimes soldiers. The graphics are very dated but adequate, and the sound is okay with spot fx and a little from 'The Great Escape' film, but it's the gameplay that counts and this game is very addictive.

All together this compilation is good value and represents a good buy.

C.K.

Price: £4.99
Graphics: ★★★★
Sound: ★★★
Playability: ★★★
Rating: Crisp

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Preview

PINBALL WIZARD

KINGSOFT ROBTEK

This, the latest game on the Amiga front from Kingsoft, is as you must have guessed a pinball simulation.

After a title sequence in typical Kingsoft style; agreeable music and visual effects to match the game starts. The pinball table is on the left of the screen, with a score panel to the right. Thhe speed that the ball is shot is determined by the length of time the spring is pulled back. The table is decorated with colourful lights and designs, with mushrooms, rails and tunnels to be hit for points. There is not much for the player to do, just flip the flippers, but, of course, that's what happens on a real pinball machine, but the game can be surprisingly good fun to play. The movement of both flippers and ball is realistic.

The graphics are small, but well drawn and colourful, and some excellent sound effects add to the enjoyment. When your last ball rolls helplessly between the flippers, a nasty voice ridicules you loudly.

As pinball games go, this is very good, and makes use of the Amiga's sound and graphics well, and although if not a highly complex game pinball fans will find it well worth their while.

T.H.

Price: £19.95

Q BALL

English Software

The idea of a computer pool game is anything but new. The first pool arcade machine appeared around six years ago. However, Q Ball, the latest Amiga game from English Software takes the pool/snooker concept into a new dimension — literally — the third.

Q Ball is played inside a cube which has a pocket at each corner. So the player can see what's going on, the side or sides facing you are transparent. Each shot is aimed with the use of the 'ghost' ball. Line this up with the shot you want and the cue ball travels straight through it. An interesting effect.

The rules aren't really pool or snooker rules, but are really more pool orientated than anything else. The game is for one or two players. In two player mode each player has his own cube and balls. As if things weren't hard enough already, there's a timer that ticks down as you line up your shot. If you haven't yet taken the shot when the timer reaches zero, the computer automatically shoots it.

Q Ball has some very clever 3D routines and makes a welcome change from the usual type of pool games. This looks set to be a big hit when it is released this autumn.

T.H.

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Adventure!

COMMENT

Welcome back my friends to the Inn at Middle Earth, take a stool and come sit with me and let us talk of adventure. By the time you read this the PCW show would have come and gone and the buying public will now know what to expect this Christmas. Was it good news or bad news on the adventure front? Well as the deadline for this column preceded the show I cannot give you an answer this month, but will provide a full show report next month you can be sure of that. If you managed to visit the show, I hope you dropped in to see us in the Commodore village.

Look out for my interview with Level 9 this month, it is always a pleasure to meet the Austin brothers, and their frankness in talking about what is wrong with current adventures these days makes interesting reading.

On a lighter note, your hero has just returned from a holiday on the continent, and it is amazing how much the home computer market has taken off over there. There nestled amongst the shops selling the usual tourist trappings I came upon a computer shop selling our trusty 64 and laden with software, with such mysterious titles as "El Caverna Grande" would you believe, which if my eyes did not deceive me was a version of Colossal Caves in Spanish! That was as far as I got I'm afraid as the time was getting on for 1pm and the shop closed for siesta, and I was going home that afternoon, still I look forward to playing "El Caverna Grande" next year.

Lastly I must say how impressed I am at all this new software coming out at this time of the year, Guild, Knight Orc, Stationfall, Lurking Horror etc. The time it is taking me to play all these adventures means that my sleep quota is not what it should be... the things we hacks have to do for you, our beloved readers.

ADVENTURE NEWS

Infocom/Nord and Bert Update

Last month I brought news of another Infocom release "Nord and Bert Couldn't Make Head or Tail Of It", and in the item I mentioned that the game is a series of short stories. In actuality the whole thing is a collection of word games within an adventure format. The eight stories have titles like, "Eat Your Words" and "Act The Part". In "Shake a Tower" you will dine with lunching mobsters and munching lobsters. Watch out for rooms that have their own personalities when you "Visit The Manor Of Speaking". Confused? You will be, that is why Infocom offers for the first time built in hints which you can cal up when you are stuck, also no mapping is needed as your position and possible moves are listed at the top of the screen. Written by Jeff (Ballyhoo) O'Neil NABCMHOTOI sounds like a lot of fun.

LETTERS

Dear Andy
May I mention that I totally agree with Mr Swinscows letters in your September issue. I too am an avid adventure fan that seems to get nowhere fast! For example, in The Pawn I've been laughed at by the Guru, knocked down by Kronos and almost broken my wrist trying to take this silver band off. I also have Sherlock, The Price of Magik, Lord Of The Rings, Spiderman and Seas Of Blood. All of which I haven't got very far with. Please could you suggest a good witty and not too difficult adventure for some of us beginners to have a bash at. If this gets published, would anyone like an adventure club on Prestel? MBX 273516152. Well done on an excellent mag!
Danny Payea, Newhaven

You really are a sucker for punishment Danny, Sherlock by any standards was very difficult, Lord of the Rings was so slow that it was frustrating, and Spiderman was ghastly. Persevere with the Pawns' hint routine or check out my hints a few issues back, and you should do OK. As for recommending some easier adventures, try Level 9's Lords of Time, Infocom's Wishbringer, and Activision's Mindshadow.

...ture!

Dear Andy
I spotted Carla Perkins cry for help in the August CCI which prompted me to search through my vast library of adventure clues for help. I succeeded (of course) in discovering the following clues to Munroe Manor.
Inspect the statue closely, and pay your toll... there are two keys a brass one and a red one. Carry only the brass one to unlock the wardrobe.
Here are my top 10 adventures: 1. ADVENTURELAND, 2. THE SORCEROR OF CLAYMORGUE CASTLE, 3. THE PAWN, 4. COLOSSAL ADVENTURE, 5. ADVENTURE QUEST, 6. DUNGEON ADVENTURE and nothing else deserves a mention especially not Infocom (ha!)
Vileroth Adventureland

Hello again Vileroth, it's good to speak with you once more. I can see from your top six is it? That you are a Scott Adams fan. Well fine if that is your bag. Personally I can't stand his style of writing or the parser system he used. Playing word games is not my idea of fun. Good to see you agree with me on the Level 9 games. PS to kill Kronos you have to smash the bottle, OK?

Dear Andy
Thank you for mentioning our 1986 "Golden Chalice Awards" in the August issue. Can you tell me why you do not agree with the results. One must bear in mind that only around 20% of all computer owners have disk drives and in view of the large number of Members who voted for the awards this may explain why adventures such as The Pawn or Leather Goddesses did not do that well.
H J Mueller, Director
Adventurers Club Ltd.

Thanks for your letter Henry, I take your point on the disk drive subject, but that does not change the fact that in my view, Kayleth was second rate. The Very Big Cave Adventure, whilst fun to play and quite amusing couldn't stand up to The Boggit in the laughter department, and Magik for me was one of Level 9's most disappointing releases. What about Red Moon, or The Pilgrim or Dracula?

Dear Andy
A word in your ear. Being a veteran of Ultima III and IV and waiting for I and V to appear, I took your advice and got Shard Of Spring thinking that anyone who could defeat Exodous and become an Avatar would have no trouble knocking off one minor Sorceress and saving a rather small though scenic island. Well, I got into Ralith and a problem occurred, how do I input the word into the computer to destroy the gate? I hope you can help.
Brian Coulhard, Maryport

Alas Brian you have entered into part of Shard of Spring that I did not reach so I can't give you exact help, but what I will do is have a word with Jerry Howells at US Gold and see if he can help. Failing that is there anyone out there who can come to Brian's aid?

Dear Andy
I have read your reply to my first letter. I am afraid it was a little too late as I had already completed these problems, but you CAN become human in Kayleth. You must take the processed ore and place it in the tube shape in the indentation. Place Yurek in the indentation and you become human again. I think your hints are straight off the Kayleth hint sheet as the other questions I asked you were not on it so I think you do not know the answers. I don't think you will print this because it is slagging you off!!! But I still like your adventure section. It is extremely good and informative, so now I ask you again for help in Incredible Hulk. How do you stop the ants, meet other characters, get past the warp and move the iron ring?
Brian Graham, Ayr

You really are pushing your luck, my friend. Your first letter was full of criticism but asked for help, so I gave it to you. Then, you now have the gall to complain that the hints were off the hint sheet! If they were off the hint sheet, how could I make a mistake about the Human transformation? I admit that it was some time since I played the game, and got my wires crossed on that part, but the other hints were OK. As for more help on Incredible Hulk, I suggest you write off for your own bloody hint sheet!

Adventure!

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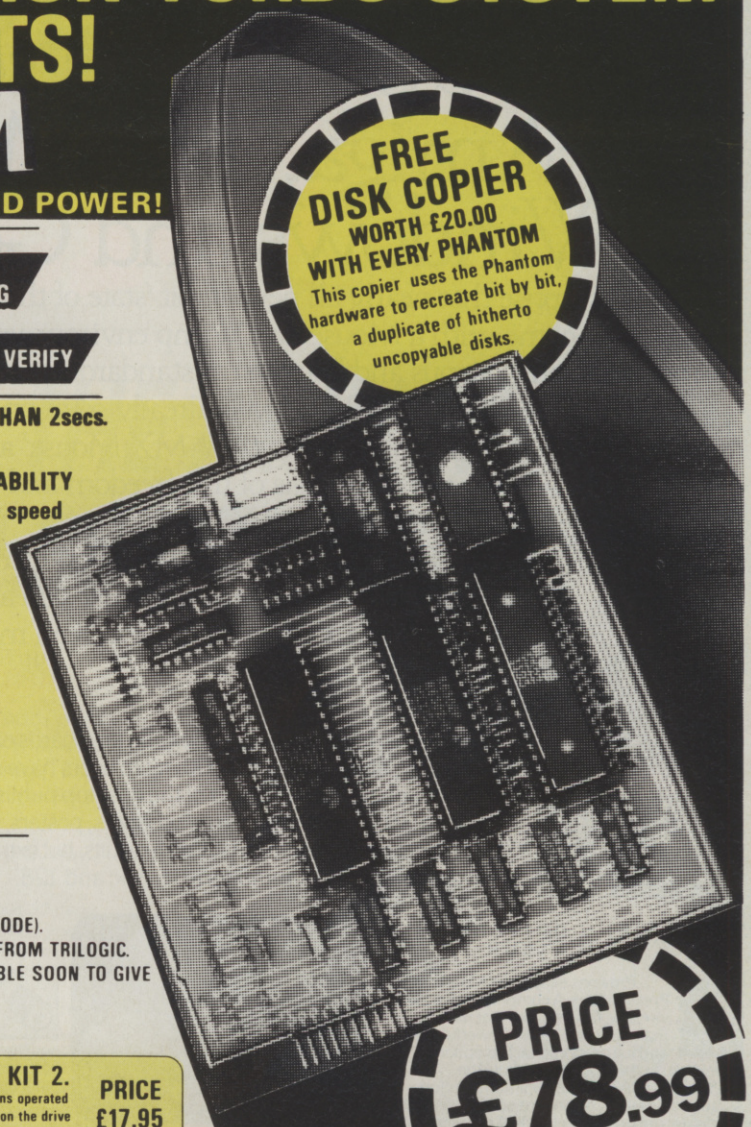

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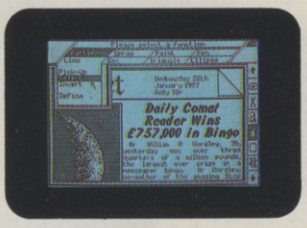

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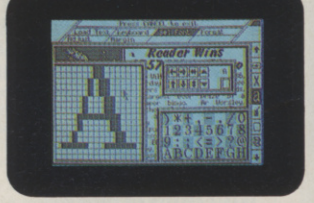

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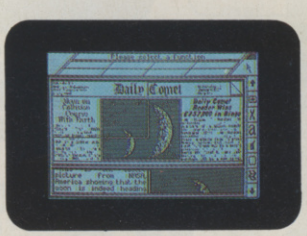

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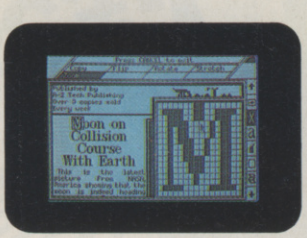

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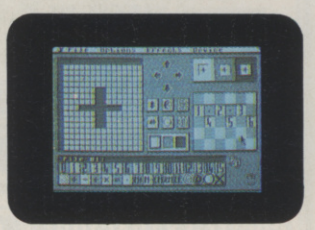

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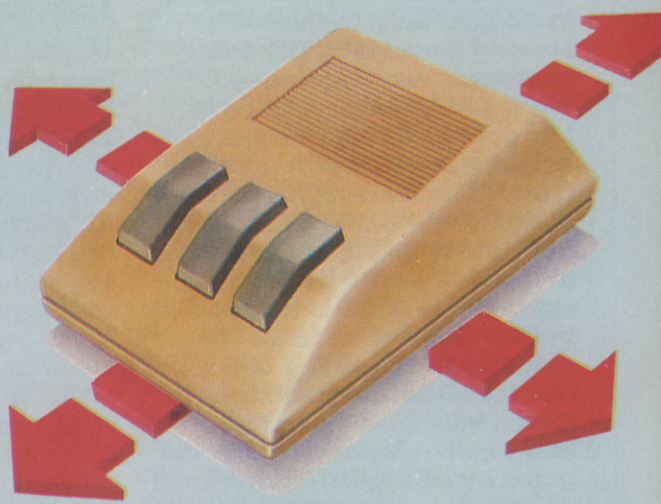

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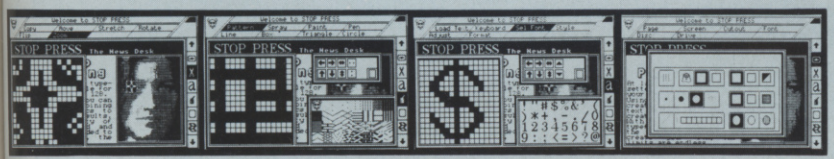

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The Lurking Horror

Infocom — £24.95

Well, it had to happen. I didn't think it ever would but it has, I afraid to say. The time has come to announce that Infocom have disappointed me, they have let the side down, they have failed to do their duty, in short — Lurking Horror is by Infocom standards very poor indeed. What, I hear you say, on earth has got into this man Moss, he is actually criticising an Infocom game. What heresay, what blasphemy, no dear reader the truth. I may be the first journalist in the World to do it but I must say that this game is very poor indeed. More so because the author is Dave Lebling whom I had the honour of meeting at a Press lunch not so long ago, and whetted my appetite for the game by telling me it as his best work to date. Coming from the man who co wrote Zork this was heavy stuff indeed, so imagine my surprise at the quality of this release.

The game centres around a university campus one winter's night, where in the midst of a raging blizzard, you find yourself snowed in inside the technical dorm, which just happens to have some rather unpleasant goings on in its nether regions down in the basement. At the beginning of course you have no idea of this horror that awaits you, and you happily explore the old building which houses your computer study facilities. I found the puzzles in this part of the game a doddle, so much so that I started looking for a puzzle within the puzzle I had cracked just in case I was missing something. But no, the usual objects were lying around in convenient places, and I found the whole thing, well boring. Even the famous Infocom parser was at fault, for when I came across a description that read, "You cannot start the microwave as the time has not been set" I typed in "set timer to 1" and the message came back "I do not know set" or "timer". Strange...

Obviously, compared to your average adventure this will be good, but this is an Infocom game, and it's just not good enough. Sorry Dave, back to the drawing board.

Personal rating *4*

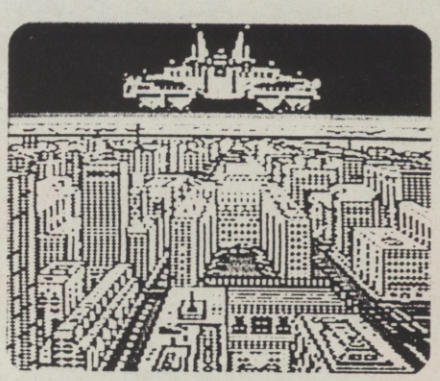
Alternate Reality The Dungeon

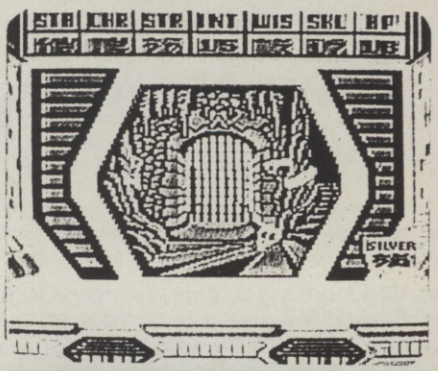
US Gold — £14.99

Beneath the City of Xebecs Demise lies the Dungeon. Within these dank gloomy corridors lies the secret to your existence in Alternate Reality. All you have to do is find it. This is a highly recommended sequel to the original which has been spruced up, the bugs taken out, and is in fact four times larger than the first.

The opening credits are the same, and the way you generate a character has remained, although you can bring in a previously saved character from Alternate 1.

I must say I found the game much faster to play, and not so much disk swapping is needed





this time round. If you are a fan of The City, then get The Dungeon it is a worthy successor.

Personal rating *8*

High Frontier

Activision — £9.95

This is going to be a very controversial release for Activision as it deals with a subject that is very touchy to some people, and that is Nuclear War. Personally I do not intend to enter into any argument for or against, but strongly recommend that people who are fascinated by what could happen if, or what would happen if not, should sit down for an hour and play High Frontier, and just get a glimpse of the REAL tension behind arms build up. The game is about the American SDI programme, the satellite defense system that will shoot out any nuclear rockets before they reach us. You are the Project leader committing staff and funds to the system in order to maintain a sufficient defence against your computer opponent.

When the inevitable happens, and DEF CON 1 is reached providing you have got it right, and it's not easy, all the missiles will be blown up in space, leaving you to do the necessary to the opposition.

A very impressive piece of software that is not hard to get into, but tough to master.

Personal rating *8*

Adventure... CONTINUED

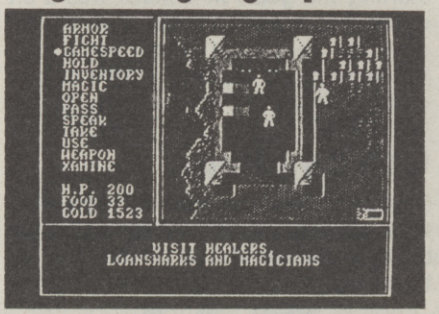
Legacy of the Ancients

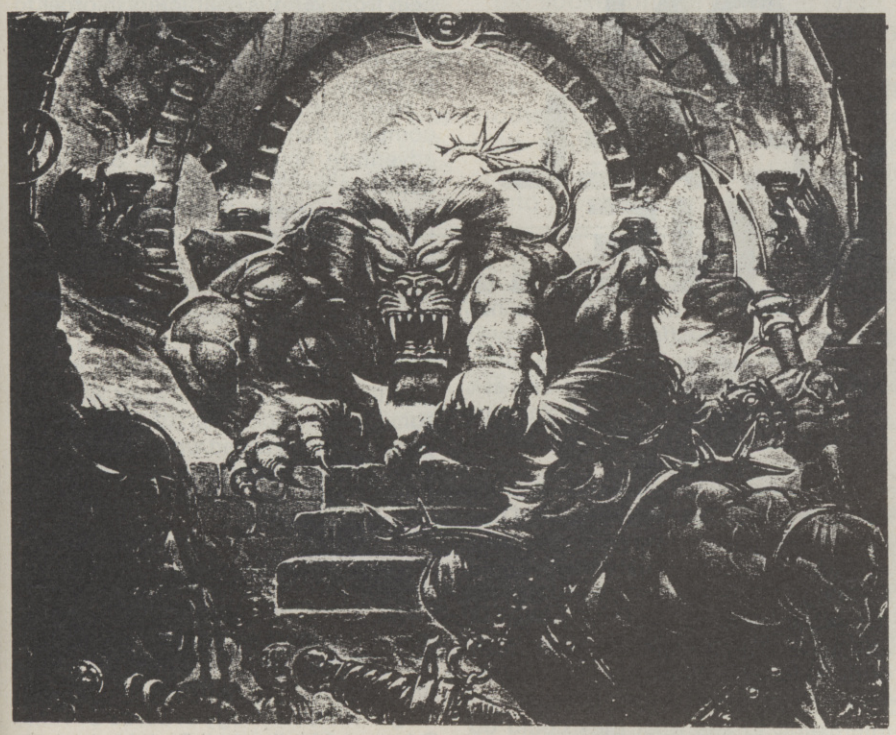
Electronic Arts — £14.95

Here it is folks, hot from the US of A and it is one of the most interesting role players I have seen to date. Similar in part to the Ultima/Phantasie/SSI games in that there is the usual monster bashing outside the towns where gold and experience and weapons can be found, and then the usual trading inside the towns. Where Legacy of the Ancients wins out for me is in the secondary scenario, that of the Time and Space Museum which is the doorway to many different locations within the game. The museum, which is depicted in stunning 3D with flickering torches lighting your way round its reddened walls, has exhibits which provide clues and information, useful items, gold and transportation to the many locations. To view each exhibit you need a certain type of coin and these are only available on the outside. So you can see, a lot is going on in Legacy. The actual quest is to destroy an ancient scroll which you found on a still warm corpse. It is the Wizard's Compendium, fire will not burn it, nor will any blade cut it, yet destroyed it must be. You want a lot to do? Lots of choices? You get it here. Continents, oceans, wilderness, towns, dungeons, castles, fortresses, puzzles, casinos, magic and fighting. Superb graphics and great sound combine to make this whole game a truly masterful experience.

The great thing about this game, is there is not much to learn (the manual is pretty thin) just get on with enjoying yourself. Miss it at your peril.

Personal rating 9





Bards Tale II

Electronic Arts — £14.99

For lovers of Interplay's work of which I am first in the queue, Bard's II is their pinnacle achievement to date. I remember their first offerings, from text graphics adventures like Mindshadow and The Tracer Saction, through to the CCI OSKAR winner Tass Times in Tonetown. Bard's was a different beast altogether, as the project was one of extreme complexity when you think of the moving graphics and countless spells that were available.

In Bards II they have increased the playing area by 50% included over 100 different monsters, 79 new spells, 25 dungeon levels and 6 entire cities!

Have they overstretched themselves this time? The answer is a resounding NO sir, as Bard II The Destiny Knight is a magnificent piece of software that begs to be played for hours. I make no secret of it, I got hopelessly lost on more than one occasion, but persevered again and again. Bards II is not just a role playing game, it is an experience in state of the art programming that you can only sit back and admire.

Personal rating 9

Adventure!

MORE PLEASE DEPT.

Can I have some more of your top 10 adventures please, it would be nice to gauge who like what for future reviews, also if anyone has some maps they would like to see published, send them in to me at CCI towers. That's all for this month, next issue another of my special mega hints columns, and yet some more Infocom reviews, see you then, happy hunting.

A.M.

Adventure!

ON LEVEL NINE...

Level 9 are now regarded as possibly the UK's number one adventure house, Andy Moss examines their rise from relative obscurity to fame and fortune — an adventurous story indeed...

The new Level 9 set up (they have recently moved from High Wycombe) comprises four houses, all next to each other, where the brothers live and work.

"We found this arrangement quite satisfactory" said Pete "each of us can work in comfort in our own way and meet up when we need to. It works very well."

The houses are practically packed solid with hardware. Monitors and keyboards abound along with racks of coding manuals and listings of familiar old Level 9 adventures. Pete introduced us to one of his brothers, Nick.

Pete recalls "Nick owned a Nascom and together with Mike produced a number of programs which we felt had commercial viability. These were not Adventures, but arcade shoot 'em ups, and we started Level 9 to market them part time. One day, I played Crowther and Woods Adventure on a mainframe — a horrible great program, and I thought we could certainly do this in 16K. Mike produced the first A Code compiler and I wrote the game design from memory, using the same locations as the original but my text. We then had an adventure game and an adventure system. Having done that Adventure Quest and Dungeon Adventure followed pretty rapidly."

Many conversions followed, and two years and some tens of thousands of tapes later they decided that to maintain and produce quality adventures they had to go full time. The brothers then got down to some serious hard work, and produced Lords of Time, Silicon Dreams Trilogy and Red Moon, not to mention a lucrative contract with Mosaic to implement the Adrian Mole series.

Scott Adams' Unfriendly Parser

Pete has very definite views on adventure construction and parsers "I've seen adventures with a whole mish mash of puzzles just shovelled in with totally illogical answers. Our puzzles tend to be grouped together so you won't have to wander across to the other side of the game to get an object you need to solve a puzzle. Scott Adams, for instance, didn't develop his parser at all. It was very unfriendly and his games were very small. It was only because of the parser that people found solving his games so hard. Then just because added a few pretty pictures, all you reviewers raved about it".

Pete shooting from the hip as usual, but he is clear about what he likes. Pete prefers to wander a lot in his games. He feels that you shouldn't be hampered in exploring, by having to solve puzzles before you continue. In all Level 9 games you can wander around, except of course Return to Eden which had a time limit of around 20 moves before you got burnt to a crisp. He accepts that they have made mistakes. "Snowball's beginning was too difficult, perhaps starting the game in a maze was a bit unfair, but it was all totally logical. We gave up on random mazes years ago, but anyway we've made mazes redundant in Knight Orc with our new "go to" command".

Goodbye Maps

Pete calls these commands "high level with special cases". A special case being a command that relates only to the character at a certain point carrying certain items; if those items are not present then a different action will occur, not just a "I can't do that" statement. In Knight Orc you can ask any character either to go to a place, or get something and they will do it. Goodbye, maps, forever.

Comparisons to Magnetic Scrolls' parser causes Pete to remark "They have, until Guild of Thieves, only ever released one adventure, they should have had more, but are clearly behind schedule. Their parser is certainly adequate. It's no better or worse than ours. As far as Infocom goes, our system is a hell of a lot better. It would be interesting to see what they could do given a tape only system as we have had to use. Our answer is to make the games 3 parters, one 3 part game is the equivalent of a 200K disk game."

One thing with which Level 9 have always impressed me is their keenness to keep experimenting on new ideas, "We would have had a MUD system up and running by now if we thought there was a large enough market for it. It's too expensive to run, and too expensive for the consumer to play often enough."

Pete, whose adventuring robots were planted playing Sci Fi DOD at University, is keen to release an all-singing all-dancing multi-player arcade role playing adventure, with plenty of puzzles and monsters and magic. He is quick to point out that this project, being written for next year, will not be a Gauntlet clone, but more on the lines of Ultima or Phantasie, with better graphics and faster play. "We do not like existing role players because the graphics are not good enough, like stick men moving around a flat landscape do not make a good game, and having graphics of pretty trees is waste, all graphic locations should be there for a reason. All the games today are bloody awful, too slow and not enough puzzles. Ours will be very fast, 3D and WILL be exciting.

Gnome Ranger

What about non-Rainbird product? It seems that there is a new Level 9 only, game about to be released called Gnome Ranger. "Gnome Ranger, is about a Gnome called Ingrid, our version of Maria Whittaker who is banned from her village because of her radical views, and sent into the wilderness where her adventures start, as she has to recruit help from various characters in order to get back to her village again. This is our product totally and we will distribute it as such."

How does it feel to be tied in to a company that has Britain's other quality adventure house Magnetic Scrolls on board as well? "Working with Rainbird can be frustrating" he says, "We give them finished games and they don't do anything with them for some time because they do not fit into their release schedules. They have other commitments and we have to take our turn. Another perfect example came when I was in their offices last week and saw some new packaging of one of our games. When I asked what it as for, they informed me that it as the new packaging for the USA and that they had sold 20,000 copies!"

Time and Magic

Level 9 are not standing still, and it seems the more they take on, the more creative they get. Currently, they have four projects on the boil, 'Time and Magic' will be a trilogy of Lords Of Time, Price of Magik, and Red Moon, and Gnome Ranger will be launched in the States. Meanwhile, Knight Orc is their current biggie, and the boys are hard at work converting it to 8 bit.

Combine this talent with Rainbird packaging and you have a team that will attempt to take both Europe and the USA by storm next year for sure.

As I drove home, I thought of a company in Cambridge Mass. USA who, if they were not 4000 miles away might soon be shaking in their boots. Level 9 the Adventurers are on the march.

A.M.

RS232 INTERFACE

By York Electronic Research

If you are the proud owner of a Commodore 64, then you may well have encountered some of the problems that often arise when trying to attach new peripherals to your prized possession. In particular, those that don't bear the Commodore logo. Commodore, in their wisdom, made almost every plug, socket and interface on the 64 about as non-standard as possible. The only exception I can think of is the joystick port (and they managed to mess that up on the Plus 4 and C-16!). Meanwhile, the rest of the computer industry has been striving to achieve some kind of global compatibility. The advantage being that manufacturers can make a product that will fit most machines. This in turn helps them to keep the price down as they don't need to dream up a new complex interface each time a new computer hits the market and anything that keeps the price down gets my vote. One partial concession Commodore did make was to enable the user port to be software configurable as an RS-232 port and as the RS-232 is one of the most popular 'standard' interfaces in the world then it seems that Commodore can't be all bad. However, as RS-232 is supposed to be a serial data transmission system that uses STANDARD connections and signals, Commodore's deviation from the more standard connections and voltages makes me wonder why they bothered at all!

Two Way Plug

YER have taken pity on us and have brought out a neat little device to help resolve our plight. You've guessed . . . a Commodore to RS-232 interface. This will change those nasty odd voltages and provide a nice standard 25 pin D type plug. It comprises a small grey box of about 7 x 5.5 x 1.2 cm with an integral user port connector on one edge and a 5 pin socket on the opposite edge. It comes complete with software and a 5ft cable with a 25 pin D type plug at one end and a small 5 pin plug the other (longer cables are available at an additional charge of 75p per metre). The interface plugs directly into the 64's user port and then the cable's 5 pin plug fits into that. However, the five pin plug is not polarized and can be plugged into the interface in one of two different ways. This has been done deliberately and is a very clever way of enabling the interface to be configured as either a host or a terminal. Plug it in one way and it transmits on pin two and receives on pin three. Plug it in the other way and it transmits on pin three and receives on pin two. Nice eh? It sure beats unsoldering wires each time you need to change device type.

The software provided gives you all the basic tools that you will need to be able to link your 64 to RS-232 devices such as printes, modems or other computers. A terminal emulator is included, which when combined with a modem, will enable you to sample the rapidly expanding and exciting world of comms.

So if you would like to be able to talk to the world and have the flexibility of a STANDARD interface . . . then get YERself an RS-232 interface from York Electronic Research NOW! £29.99. **I.B.**

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Most of you, especially if you are interested in communications, have heard of Prestel and Compunet. You may have even heard of bulletin boards. Bulletin boards are numerous and when one is "What bulletin boards should I use?' or 'Which one is best for me?'. Often, the only answer is try and see. However, after a little research, I have managed to compile a table of those bulletin boards which have 'Commodore' amongst their special interest groups (SIGS).

Happy Hunting! — J. COHEN

Note: v stands for viewdata and s for scrolling

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AND	s	1200/1200 9 pm-6 pm
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AND	s	300/300 9 pm-9 am
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Tel 0902 745337 Wolverhampton	s	1200/1200 available
AND	s	300/300 24 hours
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Place AND	s	300/300 24 hours
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Tel 0784 38110 Santuary	s	300/300 available 24 hours
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AND	s	300/300 24 hours
Tel 0625 33703 OBBS	s	1200/1200 available
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KERNAL INTERCEPT

This routine by Simon Clarke allows the specifying of a load address instead of the address from which a program was originally saved. Written for the 64, it can be easily adapted to the Plus/4, C16 or even the Vic 20.

The Commodore 64 Kernal ROM at addresses $E000-$FFFF hex (57344-65535 decimal) contains many essential utility and input/output routines. One of the most useful of these is the 'LOAD' routine which loads program files into memory and begins at $FFD5 in the Kernal jump table. This routine is very versatile and allows the user to specify a load address rather than the address from which the program was originally saved. The specified address is contained in the .X and .Y and .Y would contain $00 due to byte wraparound.
index registers in the standard 6502/6510 low/high byte order. On completion of an error-free load and .X and .Y registers contain the last address that was stored to PLUS ONE. So, for example, if the last address loaded was $6923 (hex) then the .X register would contain $24 and the .Y register $69 ($6923=$01). If in the very remotest of cases, maybe loading bitmap data, the last address was $FFFF, then both .X

```
 10          ;KERNAL ROUTINE 'CHROUT' INTERCEPT
 20          ;
 30          ;(C) SIMON CLARKE 1987
 40          ;
 50          .ORG    $C000
 60          ;
 70          ;KERNAL ZERO PAGE USAGE
 80          ;
 90 DEVICE  =$BA
100 TAPEST  =$C1
110 DISKST  =$AE
120         ;
130 IBSOUT  =$0326              ;CHROUT INDIRECT VECTOR
140         ;
150 CHRINT  SEI
160         ;
170         LDA IBSOUT
180         STA OUTSAV
190         LDA IBSOUT+1
200         STA OUTSAV+1        ;SAVE OLD VECTOR
210         ;
220         LDA #NEWOUT&255
230         STA IBSOUT
240         LDA #NEWOUT/256
250         STA IBSOUT+1        ;CREATE NEW VECTOR
260         ;
270         LDA #$00
280         STA PTR             ;INITIALISE POINTER
290         ;
300         CLI
310         RTS
320         ;
330 NEWOUT  STA CHR             ;SAVE .A (CHARACTER TO BE PRINTED)
```

Rather than specifying a load address the user can let the program load at the original address from where it was saved. This may be fine in situations where the load address is previously known but on occasions the load address of a program may be required, possibly for backup purposes. There is no direct Kernal routine that returns the load address and no reliable zero page addresses that can be read. The following program will enable the user to obtain the start address of any tape or disk program by intercepting the Kernal 'CHROUT' routine. This routine, which begins at $FFD2, outputs characters to the current output device, which on power up defaults to the display screen. The program works by placing itself before the main body of the CHROUT routine by altering the 'IBSOUT' vector at $0326. With both tape and disk programs the Operating Systems will first search for the requested file. On tape no file name need be given and the first file encountered will be loaded. When the file has been found the load address is stored and 'LOADING' is printed by successive calls to CHROUT. It is at this point that the intercept routine comes into action. As characters are printed the wedged routine waits for the character sequence 'LOADING' to be sent consecutively. On that occurrence the program will then transfer the load address to a safe area of memory from where it can be retrieved later by the users program.

Though this routine is initially intended for the Commodore 64 it can easily be adapted for other Commodore machines. The Commodore 16, VIC 20 and Plus/4 all contain Kernal ROMs with appropriate vectors. By adapting the corresponding addresses there should be no reason for the program not to work on those computers.

PROGRAM CONTINUED ON PAGE 116

```
340
350                     PHA                 ;SAVE ON STACK REGISTERS .A AND .X
360                     TXA                 ;WHICH GET CORRUPTED BY THIS ROUTINE
370                     PHA
380                     ;
390                     LDA CHR             ;GET CHARACTER
400                     LDX PTR
410                     CMP STRING,X        ;COMPARE WITH CURRENT STRING POSITION
420                     BEQ FOUND
430                     ;
440                     LDA #$00            ;IF NO MATCH THEN RESET POINTER
450                     STA PTR
460                     ;
470                     BEQ EXTOUT          ;AND EXIT
480                     ;
490 FOUND               INC PTR             ;CHARACTER MATCHES SO ADVANCE POINTER
500                     ;
510                     LDX PTR
520                     CPX #$07
530                     BNE EXTOUT
540                     ;
550                     LDA DEVICE          ;SEVEN CHARACTERS CORRESPOND SO SAVE
560                     CMP #$01            ;START ADDRESSES ACCORDING TO DEVICE
570                     BNE DISK
580                     ;
590                     LDA TAPEST
600                     STA STADD
610                     LDA TAPEST+1
620                     STA STADD+1         ;SAVE TAPE START ADDRESS
630                     ;
640                     JMP DONE            ;THEN EXIT
650                     ;
660 DISK                LDA DISKST
670                     STA STADD
680                     LDA DISKST+1
690                     STA STADD+1         ;SAVE DISK START ADDRESS
700                     ;
710 DONE                LDA #$00
720                     STA PTR             ;CLEAR POINTER FOR POSSIBLE FUTURE USE
730                     ;
740 EXTOUT              PLA                 ;RESTORE SAVED REGISTERS FROM STACK
750                     TAX
760                     PLA
770                     ;
780                     JMP (OUTSAV)        ;JUMP TO PREVIOUS VECTOR ADDRESS
790                     ;
800                     ;PROGRAM VARIABLES HERE RATHER THAN IN
810                     ;ZERO PAGE SO NO CLASH WITH USER PROGRAM
820                     ;
830 OUTSAV              .WORD   $00
840                     ;
850 PTR                 .BYTE   $00
860                     ;
870 STADD               .WORD   $00
880                     ;
890 CHR                 .BYTE   $00
900                     ;
910 STRING              .BYTE   'LOADING'
920                     ;
930 ENDOUT              .END
```

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Richard G Hunt

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What is multi-tasking?

Simply put, it is running a number of tasks or applications concurrently on a single machine. The Amiga can do it, but then the Amiga costs a ittle more than the Plus 4 did. Nonetheless it is possible to play at something like it on the Plus 4.

Dear old CBM BASIC usually starts on the Plus 4 at location 4096 ($1000) and goes on to 64768 ($FD00). Personally I could never dream of writing one program that uses all 60000 odd bytes, in BASIC. That leaves masses of unused (and unusable) memory. The program MTEL (Multi-Task Emulation Loader) allows you to use more of this memory all at the same time, because up to 4 programs can be resident all 'concurrently'. In that sense it is emulating multi-tasking, although of course nothing is really done concurrently, because the processor is not capable of it.

What we have therefore is a program that partitions memory and allows the user to flip from one partition to another, loading, writing, saving, running programs in each independently of the others. A machine code program sitting (I hope) out of reach of BASIC is keyed to Function Key 1 and allows the user to flip partitions or reset the computer when done. Some care must be taken to make the partitions big enough for the intended program. I must also add a word of warning: the program does not appear to behave in all circumstances completely sanely. Nor would you if your personality were split four ways! BASIC can be corrupted after running another partition. That is almost certain if GRAPHICS commands are used. If LIST fails to work properly, try adding a line 0 REM. This also attempts to re-link BASIC lines and may correct the program for listing. Deleting the line may have a similar effect. However if the pointers are really up the twist, I regret you have to reset and start again. (A rule you learn early in this game: SAVE often and with version identities so that more than one previous version is available should total corruption dog your steps.

The Program

The BASIC program performs two functions. Firstly it requests partition parameters from the user. Then it writes the machine code program and calls it. From the machine code program the partitions are selected.

To create the program, type the BASIC program as listed, taking care with the data at the end. If the program fails after the "Is this correct?" prompt, check the data carefully for errors, correct and resave. Make sure that the program is first saved before it run for the first time! For those interested in machine code and how the program works, an Assembler listing of the machine code program is provided also.

Instructions

1. Load and run MTEL.
2. Select the number of partitions required between 2 and 4, and press <return>.
3. For each of the partitions supply the start and end page numbers in memory. For ease a matrix is given below of typical settings.
4. If you have entered partition parameters correctly press Y at the prompt otherwise N will restart the program if a mistake has been made.
5. The next menu requests selection of either one of the partition numbers set up, or R which resets the computer as from a cold start. If a partition is selected the partition number is echoed to the screen and remains visible for checking. The READY prompt indicates BASIC awaits your commands.
6. Enter the command NEW <return> whenever you first enter a partition, in case spurious data exists which may upset BASIC. In fact because part of the machine code program incorporates a routine that UNNEWs or OLDs a program in memory by restoring the BASIC links, NEW is often harder to do than you might expect! LOADing a new program is the most effective way to get rid of one not wanted. So if nothing else use this program with one partition and treat it as an OLD command.
7. A BASIC program may not be written, loaded and run (and recovered after NEW!). Note that ML programs will cause the machine to hang because the linker cannot establish the linkages. Pressing RUN/STOP and the reset button and filling the area with zeros from TEDMON solves the problem.
8. To select another partition press Function Key 1. When you return subsequently to a previous partition the program will still be resident and may be run again at will. Please note however that there may be problems with programs containing graphics commands. Memory is switched around by the GRAPHICS statement and messes up the pointers.

Final Word

No, it's not true multi-tasking. It's rather fun, I thought, and it was even useful in creating the final program out of two separate parts. Incidentally the Assembler listing can be adapted for other machines like the C-64. Obviously all addresses will need checking, and the program should be assembled or poked into high RAM, above TOP. The program as it stands is now in the ICPUG Plus 4 library which is available to all members free.

Partition	1		2		3		4	
	Start	End	Start	End	Start	End	Start	End
Normal	16	253	-	-	-	-	-	-
2	16	128	128	253	-	-	-	-
3	16	64	64	128	128	253		
4	16	32	32	64	64	128	128	

CONTINUED ON PAGE 120

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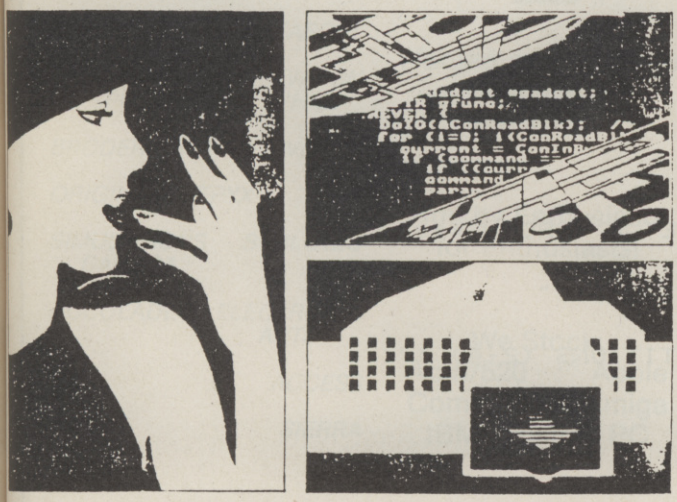

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The BASIC program, including the machine code as data statements:

```
100 REM MULTI TASK EMULATION - PLUS 4
110 REM BY RICHARD G HUNT, 7/8/87
120 REM SETUP PROGRAM
130 KEY 1,"SYS 1536"+CHR$(13)
140 PRINT CHR$(147):PRINT"            *** SETUP SCREEN ***"
150 PRINT"  *** PLUS 4 MULTI TASK EMULATION ***"
160 PRINT:PRINT:PRINT:PRINT"HOW MANY PARTITIONS (2-4) :":
POKE3072+6*40+27,51
170 POKE 2048+6*40+27,2 :P=3: REM RED
180 FOR L = 1 TO 2 STEP 0
190 GETKEY A$: IF A$="" THEN NEXT L
200 IFA$>CHR$(48)ANDA$<CHR$(53)THENP=VAL(A$):POKE3072+6*40+27,P+48
:NEXT L
210 IF A$<>CHR$(13) THEN NEXT L ELSE L=2: NEXT L
220 POKE 208,P: REM $D0
230 FOR J = 1 TO P
240 PRINT"ENTER START PAGE NO. FOR PARTITION " J;:INPUT A
250 POKE 209+J,A
260 PRINT"ENTER END PAGE NO. FOR PARTITION   " J;: INPUT B
270 POKE 212+J,B : REM $D5
280 NEXT J
290 PRINT:PRINT"IS THIS CORRECT (Y/N)? ";
300 GETKEY A$: IF A$=""THEN 300
310 IF A$="N" THEN RUN
315 PRINT"PLEASE WAIT..."
320 FOR J = 0 TO 253 : READ M : POKE DEC("600")+J,M:N=N+M: NEXT
325 IF N<>26843 THEN PRINT"DATA ERROR":END
330 SYS 1536
340 REM MACHINE CODE PARTITION MENU FOLLOWS
```

CONTINUED ON PAGE 122

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```
1000 DATA 160,34,185,180,6,32,210,255
1010 DATA 136,16,247,32,164,6,162,0
1020 DATA 232,160,11,185,214,6,32,210
1030 DATA 255,136,16,247,138,105,48
1040 DATA 32,210,255,32,164,6,228,208
1050 DATA 208,231,32,164,6,160,13,185
1060 DATA 238,6,32,210,255,136,16,247
1070 DATA 32,164,6,160,7,185,231,6,32
1080 DATA 210,255,136,16,247,32,228
1090 DATA 255,240,251,32,210,255,160
1100 DATA 5,136,217,226,6,240,6,192
1110 DATA 255,240,167,208,244,201,82
1120 DATA 240,86,233,48,170,181,209
1130 DATA 133,44,141,50,5,169,0,168
1140 DATA 133,43,141,49,5,141,51,5,145
1150 DATA 43,230,43,200,152,145,43,138,72,32,24
1160 DATA 136,104,170,165,34,105,2,133,45,133,47,133,49,165,35,105,
0,133,48
1170 DATA 133,48,133,50,181,213,133
1180 DATA 52,133,53,141,52,5,96,76,25
1190 DATA 138,133,72,56,22,240,255,232,160,10,24,32,240,255,104,170,
96,17,42
1200 DATA 42,42,32,83,78,78,73,84,73
1210 DATA 84,82,65,80,32,52,32,83,85
1220 DATA 76,80,32,42,42,42,32,32,32
1230 DATA 32,32,32,146,147,18,32,78
1240 DATA 78,73,84,73,84,82,65,80,146
1250 DATA 49,50,51,52,32,32,63,84,67
1260 DATA 69,76,69,83,17,82,18,32,32
1270 DATA 32,32,32,84,69,83,69,82,146,0
```

```
      START  = $600
;
      * = START
;
;
        LDY #34
NEXT1   LDA TITLE1,Y        ; PRINT HEADING
        JSR BSOUT
        DEY
        BPL NEXT1
        JSR PLOTSUB         ; CURSOR DOWN
        LDX #0              ; COUNTER FOR NO. OF PARTITIONS
NEXT2   INX
        LDY #11
NEXT3   LDA TITLE2,Y        ; PRINT PARTITION MENU
        JSR BSOUT
        DEY
        BPL NEXT3
        TXA
        ADC #$30
        JSR BSOUT           ; PRINT PART NO
        JSR PLOTSUB
        CPX PARTNO          ; IF NOT LIMIT OF PARTITIONS
        BNE NEXT2           ; CONTINUE TO PRINT
        JSR PLOTSUB         ; ELSE REPOSITION CURSOR AND
        LDY #13
NEXT4   LDA TITLE4,Y        ; PRINT RESET
        JSR BSOUT
        DEY
        BPL NEXT4
        JSR PLOTSUB
        LDY #7
NEXT5   LDA TITLE3,Y        ; AND SELECT
        JSR BSOUT
        DEY
        BPL NEXT5
GETANS  JSR BASIN           ; GET CHARACTER FROM KEYBOARD
        BEQ GETANS          ; IF NONE, LOOP UNTIL KEY
                                                  PRESSED
        JSR BSOUT           ; ECHO IT
        LDY #5              ; MAX OPTION +1
TEST    DEY                 ; ADJUST TO INDEX START
        CMP VALID,Y         ; IF VALID
        BEQ OK              ; CONTINUE AT LABEL OK
        CPY #$FF            ; ELSE IF INDEX NEGATIVE
        BEQ START           ; DO AGAIN FROM START
        BNE TEST            ; ELSE CONTINUE TESTING
OK      CMP #'R'            ; IF R FOR RESET
        BEQ RESET           ; RESET
        SBC #$30            ; ELSE MAKE IT INDEXABLE
        TAX
        LDA BPART,X         ; GET BOT OF BASIC FROM PARAMETERS
        STA TXTTAB+1        ; SET POINTERS, HIGH BYTE
        STA LORAM+1
        LDA #0              ; SET BOT OF BASIC, LO
        TAY
        STA TXTTAB
        STA LORAM
        STA HIRAM
        STA (TXTTAB),Y      ; 0 TO FIRST BYTE BASIC
        INC TXTTAB          ; FIRST BYTE + 1
LINK    INY                 ; RE-LINK BASIC
        TYA
        STA (TXTTAB),Y      ; NON-ZERO BYTE FIRST LINK ADDR
        TXA                 ; SAVE .X REGISTER WITH PART. NO
        PHA
        JSR LNKPRG          ; MAKE ALL LINKS CONSISTENT
        PLA
        TAX
        LDA $22             ; ADD 2 TO FINAL ADDR
        ADC #2              ; GIVING PROGRAM END ADDR
        STA VARTAB          ; STORE IN POINTERS
        STA ARYTAB
        STA STREND
        LDA $23
        ADC #0
        STA VARTAB+1
        STA ARYTAB+1
        STA STREND+1

        LDA TPART,X         ; GET TOP OF BASIC
        STA FRETOP+1
        STA MEMSIZ+1
        STA HIRAM+1
        RTS                 ; WARM EXIT
;
RESET   JMP COLD
;
PLOTSUB TXA                 ; SUBROUTINE TO
        PHA                 ; SAVE .X REGISTER
        SEC
        JSR PLOT            ; GET CO-ORDINATES
        INX                 ; CURSOR DOWN
```

```
        LDY #10             ; COLUMN POSITION
        CLC
        JSR PLOT            ; SET CO-ORDINATES
        PLA                 ; RECOVER REGISTERS
        TAX
        RTS                 ; RETURN FROM SUBROUTINE
                            ; TITLE TABLES
                            ; IN REVERSE ORDER
TITLE1  .BYTE $11
        .TEXT '*** SNOITITRAP 4 SULP ***
        .BYTE $92,$93
TITLE2  .BYTE $12
        .TEXT ' NOITITRAP'
        .BYTE $92
VALID   .BYTE '1234R'
TITLE3  .TEXT ' ?TCELES'
TITLE4  .BYTE $11,'R',$12
        .TEXT '     TESER'
        .BYTE $92
        .END
```

The Assembler Source Code listing:

```
; "MTE.TXT"
; MULTI TASK EMULATION
; BY RICHARD G HUNT
; 9 AUGUST 1987
; REALLY ITS ONLY A PARTITIONING EXERCISE
; PROCESSOR = 6502
; MACHINE = CBM PLUS 4 ONLY
;
    BSOUT = $FFD2       ; KERNAL OUTPUT
    BASIN = $FFE4       ; KERNAL INPUT
    PLOT  = $FFF0       ; KERNAL CURSOR PLOT
    COLD  = 32793       ; ROM COLD START
    LNKPRG= 34840       ; ROM CHAIN LINK POINTERS
;
    TXTTAB = $2B        ; POINTER START OF BASIC
    VARTAB = $2D        ; POINTER START OF VARIABLES
    ARYTAB = $2F        ; POINTER START OF ARRAYS
    STREND = $31        ; POINTER START OF FREE STRING RAM
    FRETOP = $33        ; POINTER CURRENT BOTTOM OF STRINGS
    MEMSIZ = $37        ; POINTER TOP OF RAM +1
    LORAM  = $0531      ; BOTTOM BASIC RAM
    HIRAM  = $0533      ; TOP OF BASIC RAM
;                       ; DATA PASSED FROM BASIC
    PARTNO = $D0        ; NO. OF PARTITIONS
    BPART  = $D1        ; 4 BYTES FOR START PAGES
    TPART  = $D5        ; 4 BYTES FOR END PAGES
```


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Program

VIDEOFAST

by Jonathan Living

Videofast is an excellent utility to help 64 owners ease the use of hi-res graphics on the 64. It also has the advantage of enabling fast image switching to produce some very attractive animation effects.

'VIDEOFAST' is a small but very useful machine code routine, designed to enable better use of the hi-res graphics provided by the Commodore 64. It resides at location 49152 and uses the 320 x 200 pixel screen, beginning at memory location 8192.

Enter the basic loader program and save this first — as a safety copy. Then RUN it. If all is well, you will be asked for the device you wish to save the code to, and you will then be presented with a string of pokes, with the cursor positioned at the beginning. On pressing <RETURN> the code is saved. To re-load the code, type LOAD "VIDEOFAST",8,1 (replace 8 with 1 if using tape) and then type new. The code is now installed.

Under 'VIDEOFAST', the following commands are available to you:—

1. SYS 49152,X,Y,TYPE —
Range (X)= 0 to 319. Range (Y)= 0 to 199. If TYPE is set to '0' then a pixel at (X,Y) is UNPLOTTED. If TYPE is set to '1' then a pixel at (X,Y) is PLOTTED. If TYPE is set to '2' then a pixel is EXclusive-ORed, giving the effect of inversing that pixel. If TYPE is set to '3' then a test function is performed on the pixel at (X,Y). If there is a plotted point there, PEEKing location (02) reveals value '1'. If there is no point plotted, location (02) is set to '0'.

2. SYS 49396,INK,PAPER —
This clears the hi-res screen memory area (from 8192 to 16384). It also affects screen ram (1024 to 2023) in that this is where hi-res pixel and background colours are stored. INK refers to the pixel (ON) colour and PAPER refers to the screen (pixel off) colour. Both should be in the range 0-15.

3. SYS 49494,SA,DA,NB —
This command is used to copy RAM from SA (source address) to DA (destination address) for NB bytes. This command is unlimited by 256 byte maximum's and should be used to store and recall videl frames at high speed. The area available for storage is from 16384 to 40959 (decimal).

4. SYS 49584 —
Enters bit map mode but does not set colours or clear screen RAM.

5. SYS 49602 — Exits bit map mode and returns display to low-res text screen.

In addition to these commands, in the demonstration program, there is a BASIC line drawing routine at lines 250-340. A GOSUB to this routine draws a line from co-ordinate variables X1 and Y1 to co-ordinate variables X2 and Y2 with pixel type 'T', where 'T' corresponds to 0,1 or 2 (see SYS 49152). These variables (X1,Y1,X2,Y2,T and also variables X and Y) should be avoided when writing your own programs, since most of these are altered by the subroutine.

The demonstration program shows the sort of fairly spectacular results available from such a simple program. Before typing it in, load the 'VIDEOFAST' code as described above and type 'NEW'. Once you have typed the demonstration program in, save it, just in case it crashes. It will draw eight frames of a shape with as many sides as you specify (try 3 or 4 as the input) and this is done quite slowly. Just wait until the eighth has been drawn and watch that shape whip round at quite a lick!!

```
0 REM ********************************
1 REM *                              *
2 REM *    VIDEOFAST BASIC LOADER    *
3 REM *                              *
4 REM *      BY JONATHAN LIVING      *
5 REM *                              *
6 REM ********************************
10 L= 49152
20 FOR X=0 TO  31 :T=0:FOR Y=0 TO 14
30 READ A:IF A <0 OR A >255 THEN 60
40 POKE L,A:L=L+1:T=T+A:NEXT
50 READ A:T=T-(INT(T/256)*256)
60 IF T<>A THEN PRINT"DATA ERROR IN LINE"1000+(X*10)"CHECKSUM <>"A:STOP
70 PRINT 1000+(X*10)"OK":NEXT
```

Program

```
80 REM PRINT SPC(8)"LOADED":PRINT
90 REM PRINT " MAKE SURE YOU'VE SAVED THIS PROGRAM !"
100 PRINT:INPUT " DEVICE (D)ISK OR (T)APE ";D$
110 D=8:IF D$="T"THEN D=1
120 PRINTCHR$(147)" PRESS <RETURN>":C$=CHR$(34):PRINT
130 PRINT:PRINT"POKE 43,0:POKE 44,192:POKE 45,213";
140 PRINT ":POKE 46,193:SAVE ";C$;"VIDEOFAST";
150 PRINT C$;",";RIGHT$(STR$(D),LEN(STR$(D))-1)CHR$(19):END
1000 DATA 088,032,253,174,032,138,173,032,247,183,165,020,133,247,165,  034
1010 DATA 021,133,248,032,253,174,032,138,173,032,247,183,165,020,133,  192
1020 DATA 249,032,253,174,032,138,173,032,247,183,165,020,133,250,169,  202
1030 DATA 000,133,251,169,032,133,252,165,249,056,160,255,233,008,200,  248
1040 DATA 176,251,132,253,165,247,056,160,255,233,008,200,176,251,165,  168
1050 DATA 248,201,001,208,004,152,105,031,168,132,254,165,249,041,007,  174
1060 DATA 133,002,165,247,024,164,248,196,001,208,001,056,041,007,133,  090
1070 DATA 187,169,008,229,187,133,187,169,001,133,188,164,187,192,000,  086
1080 DATA 240,011,024,165,188,101,188,133,188,136,076,118,192,160,000,  128
1090 DATA 024,165,251,196,253,240,018,105,160,144,003,230,252,024,105,  122
1100 DATA 160,144,003,230,252,024,200,076,138,192,160,000,024,196,254,  005
1110 DATA 240,011,105,008,144,003,230,252,024,200,076,163,192,133,251,  240
1120 DATA 164,002,166,250,224,000,208,013,169,255,229,188,133,188,177,  062
1130 DATA 251,037,188,076,240,192,224,001,208,007,177,251,005,188,076,  073
1140 DATA 240,192,224,002,208,007,177,251,069,188,076,240,192,169,000,  187
1150 DATA 133,002,177,251,037,188,197,188,208,004,169,001,133,002,096,  250
1160 DATA 145,251,120,096,088,169,032,133,252,169,000,133,251,032,253,  076
1170 DATA 174,032,138,173,032,247,183,165,020,133,253,032,253,174,032,  249
1180 DATA 138,173,032,247,183,165,020,133,254,024,169,000,160,000,105,  011
1190 DATA 016,200,196,253,208,249,164,253,192,000,240,002,233,001,101,  004
1200 DATA 254,160,000,153,000,004,153,250,004,153,244,005,153,238,006,  241
1210 DATA 200,192,250,208,239,169,000,160,000,145,251,200,192,000,208,  110
1220 DATA 249,164,252,200,132,252,192,064,208,238,120,096,088,032,253,  236
1230 DATA 174,032,138,173,032,247,183,165,020,133,251,165,021,133,252,  071
1240 DATA 032,253,174,032,138,173,032,247,183,165,020,133,253,165,021,  229
1250 DATA 133,254,032,253,174,032,138,173,032,247,183,165,020,133,249,  170
1260 DATA 165,021,133,250,162,000,160,255,228,250,240,017,200,177,251,  205
1270 DATA 145,253,192,255,208,247,230,252,230,254,232,076,142,193,160,  253
1280 DATA 255,200,177,251,145,253,196,249,208,247,120,096,024,173,024,  058
1290 DATA 208,009,008,141,024,208,173,017,208,009,032,141,017,208,096,  219
1300 DATA 024,173,017,208,041,223,141,017,208,173,024,208,041,247,141,  094
1310 DATA 024,208,096,000,000,000,000,000,000,000,000,000,000,000,000,  072

0 REM ********************************
1 REM *                              *
2 REM *       VIDEOFAST DEMO         *
3 REM *                              *
4 REM *     BY JONATHAN LIVING       *
5 REM *                              *
6 REM ********************************
10 POKE 53280,0:PRINTCHR$(147)
20 INPUT " HOW MANY SIDES ";S
30 SD=0
40 EA=16384
50 FOR F=1 TO 8
60 SYS 49396,1,0
70 SYS 49584
80 FOR D=0+SD TO 359+SD+360/S STEP 360/S
90 R=D*π/180
100 CX=160+(90*COS(R)):CY=85+(20*SIN(R))
110 IF D=SD THEN Q=CX:W=CY
120 X1=Q:Y1=W:X2=CX:Y2=CY:T=1:GOSUB 280
```

Program

```
130 X1=Q:Y1=W+30:X2=CX:Y2=CY+30:T=1:GOSUB 280
140 X1=CX:Y1=CY:X2=CX:Y2=CY+30:T=1:GOSUB 280
150 Q=CX:W=CY:NEXT D
160 SD=SD+360/S/8
170 SYS 49494,10752,EA,3071
180 EA=EA+3071
190 NEXT F
200 REM *** ROTATE ***
210 EA=16384
220 FOR N=1 TO 8
230 SYS 49494,EA,10752,3071
240 EA=EA+3071
250 NEXT N
260 GOTO 210
270 REM ********* LINE ROUTINE *********
280 X=X1:Y=Y1:Z=10E 10
290 IF ABS(X2-X1+Z)/ABS(Y2-Y1+Z)>=1THEN 340
300 FOR Y=Y1 TO Y2 STEP (Y2-Y1+Z)/ABS(Y2-Y1+Z)
310 X=X+(X2-X1+Z)/ABS(Y2-Y1+Z):SYS 49152,X,Y,T
320 NEXT Y
330 RETURN
340 FOR X=X1 TO X2 STEP (X2-X1+Z)/ABS(X2-X1+Z)
350 Y=Y+(Y2-Y1+Z)/ABS(X2-X1+Z):SYS 49152,X,Y,T
360 NEXT X
370 RETURN
```

034
192
202
248
168
174
090
086
128
122
005
240
062
073
187
250
076
249
011
004
241
110
236
071
229
170
205
253
058
219
094
072

★ Programme Submission Procedure ★

DO NOT submit any programme or routine that you do not either own or have proper authority to do so.

ALWAYS include your name, address and the date on all material and any enclosures.
Do not forget to to make it clear exactly which computer/s your programme or article is applicable to.

Include ROM or DOS versions wherever they are pertinent.

Number all pages.

If you have to submit work which is hand-written then you must make sure it is printed clearly.

Never use staples. Use paperclips if necessary.
If you are saving your programme to tape then save it AT LEAST twice on each side.
When you save a programme on disk save it twice and call the second file "BACKUP".

Remember to label all tapes and disks with your name and the title of the programme. Label tape or disk with your name and the name or title of the programme.

Always ensure that disks are well packaged. They should ideally be sent in a commercial disk mailer or at least packed between two pieces of hardboard or rigid plastic.

Please allow at least 8 weeks for acknowledgement as all programmes have to be thoroughly tested and made into a suitable format.

Enclose a self-addressed stamped envelope or package if you would like your programme to be returned.

★ Programming tips ★
If you can, use CHR$(x) type commands instead of those hard to read graphic symbols.
If necessary renumber your programme on completion as many readers use auto number utilities to ease typing in.

Try to keep instructions within the programme itself as a sensible level. You can expand on them within the accompanying text if necessary.

TEST your programmes before submitting them or even better get a friend to test them for you.

If a programme contains machine code data please use decimal and not hex as there are fewer digits to be confused. Try and keep the same number of data statements in each line. Please add some form of error checking if your programme contains any more than five lines of data.

CLASSIFIED

Plus/4 owner wants 1551 disk drive. Will pay £300. Apply to Tom Knight, Court Leys, Toot Baldon, Oxon. OX9 9NF Send S.A.E.

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Amiga freaks to exchange software, tips, send list to Alan, 38 Mead Lane, Chertsey, Surrey KT16 8WW. My list and phone no by return. All answered.

C64 penpals wanted all over the world to exchange information, programs etc, or just to chat. Every letter answered. Write to Volker Schossler, Jakobstr.5, 4600 Dortmund 1, Germany.

For sale, sound expander (disk) £45, 5 Octave keyboard £35, sound sampler £35, five Infocom adventures £12. Tel: Penketh 8875 after 6pm.

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Microtext Teletext adapter for the C64 plug into Ceefax and page the Oracle. Cost £69.95 used once. Mint con. Accept £35.00 ono. Tel: 091 5294788 anytime.

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Amiga games for sale. As new in original boxes. Hardly used Sinbad, Faery Tale, Barbarian, Guild of Thieves. £55 the lot. Tel: 0483 893737.

Plus/4 with 1551 fast disk drive, cassette, large quantity of disk, tape, and cartridge software etc. £125. MPS803 printer £80.00. Second 1551 disk drive £80.00. Superbase disk and Superbase the book £20. Tel: Barry Lamb 0929 424423.

64 owner interested in swapping game hints and general news. Write to: B. Ashworth, 9 Badger Close, Palacefields, Runcorn, Cheshire WA7 2QW or phone: Runcorn 716475 after 3pm (tape only).

Wanted: Amiga A500 or A1000 willing to pay £350 with business software already got monitor and printer: Write to: Mick Tang, 560 Rayleigh Road, Eastwood, Southen-on-Sea, Essex SS9 5HX.

Commodore Pet computer model no. CBM 3016 with cassette drive. Three manuals. Excellent condition. Bargain at £175 ono. Tel: Southend (0702) 552410.

US penpal wanted. Male or female. I have an Amiga. I don't just want to swap software, I want a friend I can write to. Contact Richard Clafton, 3 Wykebeck Mount, Leeds LS9 0HN, England.

Swap CBM 64 software with users all over the world, disk only. Send disks to: Mark Greaves, 16 Bucklers Court, North End, Portsmouth, Hants. PO2 9AW England. NOW!

C64 penpals wanted. Please send letter disks or lists to M. Metcalf (jnr) 2 Coal Bank Road, Hetton-le-Hole, Tyne and Wear. All letters answered.

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C64 user wishes to swap the very latest software on disk anywhere in the world. All replies answered please write soon to: Mark Le-May, 45 Liverpool Road, Fratton, Portsmouth, Hants. England. Tel: 0705 863207.

Wanted CBM 1551 disk drive in good working condition with manuals and original box. Contact David Ondrey, 503 5th Str., Trafford PA 15085, USA.

C64 Pakistani owner wants to swap programs mainly business on disk only M.A. Tabssum, P.O. Box-6193 Riyadh —11442, Saudi Arabia.

Join ICUP (Independent Commodore User's Programs). We publish members useful programs on request, for FREE! Send SAE to: ICUP, 16 Spencer Drive, Sutton Heights, Telford, Shropshire TF7 4JY.

CBM Software for sale. Old and new titles tape and disk from £1.00 to £8.00 send SAE to M. Antony, 33 Pond Road, Stratford, London E15 3BD.

Many 64 games to be swapped, interested? Contact: Yazen Sheqem, PO Box 1199, Amman, Jordan. All letters answered.

For Sale: Superbase 64, EasyScript and Future Finance. All disk based, boxed and with manuals. Also Centronics interface with cable. Tel: 0284 850028.

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Wanted: January 1986 issue of Your Commodore to complete collection. If you can help please reply to: R. Hoben, 95 Geils Ave, Dumbarton, Scotland G82 2QG.

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C128 1571 disk drive, new, boxed with £200 software, sell for £570. Tel: Canterbury (0227) 66327.

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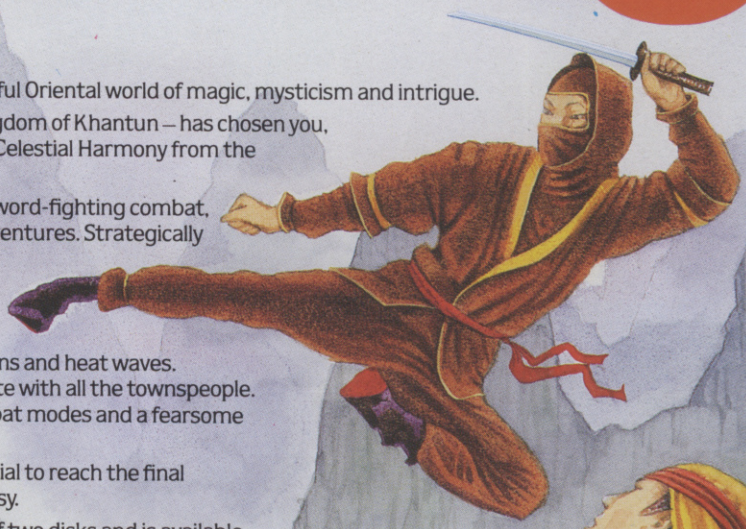

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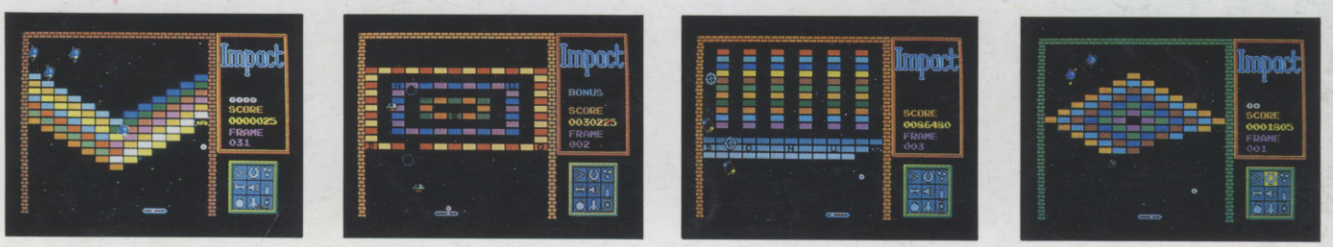

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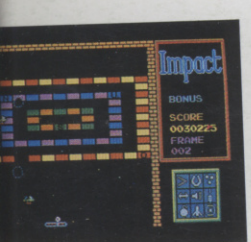

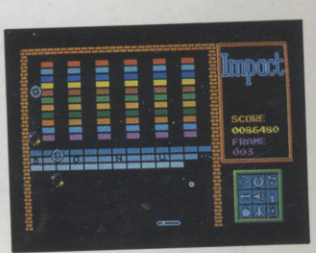

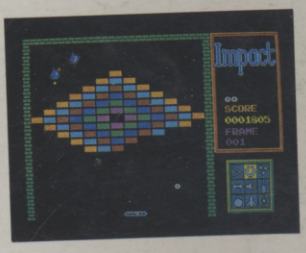

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